IMAGE: A MAP OF THE STARS OF THE ORION CONSTELLATION

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Ronald Sowadski

ABSTRACT

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Gender-Related Pay Equity by State and Industry

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ABSTRACT

The purpose of this study was to examine whether there are differences in gender-related pay equity in the public sector, among states, and industries in the United States. The study was conducted with archival data from The American Community Survey. Results of two one-way ANOVAs showed a significant difference in the gender-related pay equity among the 51 states (including D.C.), $F(50, 1740) = 1.69$, $p = 0.019$, and among the five major industries, $F(4, 1735) = 17.00$, $p < 0.01$. These empirical findings provide a basis for developing policies to address pay inequity.

I. INTRODUCTION

Since 1964, pay equity has been a social issue that the government, the entity responsible for the regulation of pay, has not been able to solve. The issue of pay equity is partly due to the lack of a complete dataset (Wade & Fiorentino, 2017). This study and the pay equity problem are based on equity theory, fair distribution of contributions, and benefits for each person (Adams, 1965). Previous scholars have utilized equity theory to research pay equity (Dennis, 2016; Rosado, 2018; Smit & Montag-Smit, 2019). Various laws and acts have been implemented; however, little progress has been made with this social issue. Regardless of the multiple federal laws implemented, women still earn less than men (White, 2019). Over the last century, the gender-related pay equity issue has narrowed, but it remains sizable (Phillips, 2018). The federal government has stated that the pay equality gap is 20% and will take another 130 years to solve (Geoghegan, 2018; Phillips, 2018; Rosado, 2018). This study may expose what states and industries contribute to the social problem of inequity and provide evidence that can provoke change.

The body of research on pay equity has common themes, including laws, acts of legislation, government changes, societal awareness, and human resource departments' responsibilities (Burn, 2018; Dennis, 2016; Smit & Montag-Smit, 2019; Swain, 2019). Future research requires assessing why the gender-related pay equity issue has not been researched more thoroughly despite the Pay Equity Pay Act being passed in 1963. At the current rate, the gender-related pay equality issue will not be closed until the year 2152 (Lobel, 2020; Phillips, 2018; Rosado, 2018). This study's findings may result in changed legislation at all levels of government and society, thereby improving the risk of obesity, heart attacks, depression, and social/financial inequity of 74.6 million women.

Additional scientific knowledge of pay equity is required. The benefits of this study may provide societal results that can change the U.S. economy while enhancing the discipline of industrial-organizational psychology. An additional 512.6 billion dollars would enter the United States economy if women were paid equally to men (Schulze, 2018). The United States gross national profit is 19.61 trillion dollars, providing almost a 3% increase in the United States economy. A 512.6 billion dollar per year influx into the economy would positively change American society.

The adverse effects of the gender-related pay equity issue are felt throughout the economy and society. Pay equity is a topic that affects 74.6 million women workers in the civilian labor force (DeWolf, 2017). Equal pay between men and women would reduce poverty for working women from 8.2 to 4%. Each of the 50 states would benefit from increased funds into their economies (Status of Women, 2020). The most significant adverse effect of gender wage inequality is that pay equity issues contribute to increased anxiety and depression rates among women (Platt et al.,

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2016). In a partnership with the Center for Workplace Mental Health, the American Psychiatric Association expressed significant concern about gender-related pay equity. The President of the American Psychiatric Association stated that gender-related pay equity issues are more impactful than economic issues and contribute to mental disorders (American Psychiatric Association, 2020). Furthermore, more recent researchers have shown that income inequality increases the risk of obesity and heart attack (Pabayo et al., 2018). It is fair to say that the adverse effects of gender-related pay equity are significant to American society.

Previous researchers studying this topic have used limited and small sample sizes, which required additional research. Obloj and Zenger (2020) researched pay equity with a sample size of only eight of the 50 states. Additionally, these authors focused on 139 institutions, representing a limited sample size within the eight states. Cortés and Pan (2019) researched pay equity, finding the study's most significant limitation to be the sample size and the need to assess industry data. The sample size only included 25 United States cities, not representing all 50 states or entire states, and did not consider industry data. Goldin (2017) identified a limitation of his pay equity studies, which included 23 out of the 50 states of the United States and only had metropolitan areas, not the entire state. Blau and Kahn (2017) researched the gender-related pay equity issue utilizing a sample size of less than 25,000 participants, not representing all 50 states and requested an entirely nationally representative dataset. Rosado (2018) researched gender-related pay equity issues trends but identified limitations in her qualitative study. Rosado asked for future research to provide a larger sample size, industry assessment, and the use of a quantitative research methodology. The previous literature gap of limited sample size has led to the need for a qualitative nationwide data set that includes all 51 states (including D.C.) and industry assessment.

Additional gaps were found in the previous literature. Previous literature utilized outdated sample data, which required further research. Many previous studies that had limitations of sample size also utilized obsolete datasets. Cortés and Pan (2019) researched pay equity and used a dataset that was eight years old at completion. The dataset that was used was the 2011 American Community Survey data. Blau and Kahn's (2017) gender earning equity study utilized a 2010 dataset that was seven years old at completion and requested future research to assess occupations and industries. Goldin (2017) researched gender earning equity utilizing a 17-year-old dataset from 2000. In the current study, the researcher used the most up-to-date dataset to ensure the validity of the results.

The U.S. Census Bureau and American Community Survey data are the most appropriate datasets for assessing state and industry-level data. Statistics are given from a national perspective to cover individual states and industries. This study may provide gender-related pay equity data by state and industry, with added analyses of potential social and economic factors contributing to pay equity issues.

II. METHODS

This quantitative, nonexperimental, comparative study aimed to examine differences in gender-related pay equity across states and industries in the U.S. economy's public sector. The study was conducted using archival data from the 2017 American Community Survey. Out of 3,526,808 responses to that survey, only 2,145,639 were retained in the final dataset because the United States Census Bureau only accepts fully completed surveys. The researcher downloaded survey data aggregated at the subindustry level by state. The dataset analyzed in this study included 1,834 data points representing 36 subindustries X 51 states (including D.C.). District of Columbia lacked data from two subindustries within the significant industry of Natural resources, construction, and maintenance (i.e., farming, fishing, forestry, and construction and extraction occupations). Explaining why the total number of cases in the data file was 1,834 instead of 1,836. There were 36 subindustries within each state, with the exception of the District of Columbia, which had only 34 subindustries. Subindustry data points best represented the total population.

The independent variables were state and industry and compared 1,834 data points for 36 subindustries within each of the 51 states (including D.C.) The dependent variable was gender-related pay equity, operationalized as the proportion of women's pay relative to men's pay at the subindustry level in each state (measured on a ratio scale as a percentage). Previous scholars have called for investigating this topic using a quantitative research method approach (Rosado, 2018; Swain, 2019). A more robust conclusion of statistical assessment to compare data between the studies and variables may increase analytical and generalized effectiveness utilizing a quantitative research method. The data analysis provided information about gender-related pay equity in all 50 states plus the District of Columbia and the industries within each state.

Gender-related pay data were analyzed with IBM SPSS Statistics software to assess gender-related pay equity specifics. The U.S. Census Bureau administered the 2017 American Community Survey, and this dataset provided a significant amount of gender-related pay data for men and women at an individual state level. Gender-related pay data retrieved from the United States Census Bureau (American Community Survey) were analyzed to assess the gender-related pay equity percentage between men and women. The American Community Survey raw data provided the percentage of gender-related pay equity for each subindustry within each state. In this study, the percentage of gender-related pay represents the compensation ratio between men and women. Higher percentages indicated better pay equity for women relative to men. Values below 100% indicated that women were paid less than men, and percentages above 100% indicated that women were paid more than men. States were broken into the five major industries to assess industry bias. The 2017 American Community Survey raw dataset provided all data points (percentages).

The variables were gender-related pay equity, state, and industry. It is important to note that the dependent variable of gender-related pay equity was utilized for both research questions. The analysis involved two ANOVA tests comparing states and industries regarding the dependent variable. A Bonferroni (1936) correction was applied to the statistical significance level to prevent Type I error inflation. The corrected alpha became .025 (.05 / 2 = .025). The following research questions and corresponding hypotheses guided this quantitative comparative study:

RQ_1: Are there any statistically significant differences in gender-related pay equity among the 51 states (including D.C.) in the United States public sector?

$H1_0$: There is no statistically significant difference in gender-related pay equity among the 51 states (including D.C.) in the United States public sector.

H1a: At least one statistically significant difference in gender-related pay equity among the 51 states (including D.C.) in the United States public sector.

RQ_2: Are there any statistically significant differences in gender-related pay equity among the five major industries in the United States public sector?

$H2_0$: No statistically significant difference in gender-related pay equity among the five major industries in the United States public sector.

H2a: At least one statistically significant difference in gender-related pay equity among the five major industries in the United States public sector.

3.1 Population and Sample Selection

This study's general population was 2.1 million respondents to the American Community Survey of men and women from the United States public sector. All 50 states, as well as the District of Columbia, were included. Additionally, the five major industries in each state were included. The original 2.1 million data points were archival data from the United States Census Bureau. Data authorization was obtained from the United States Census Bureau the Center for Economic Studies (CES), which provides public-use data.

Email confirmation of approval and consent to utilize the United States Census Bureau data was completed (see Appendix B). If permission from the United States Census Bureau had not been obtained, other public archival databases would have been considered.

Addressing the problem statement and answering both gender-related pay equity research questions required two one-way ANOVAs of aggregated archival data collected from the United States Census Bureau data (American Community Survey). The aggregated archival was retrieved from the 2017 ACS dataset. Raw data were aggregated to provide a single data point for each of the 36 subindustries from each of the 51 states (including D.C.), representing the 1,834 data points (the District of Columbia lacked data from two subindustries). The unit of observation in the survey was the individual respondent, and the unit of analysis subindustry was identified by state and utilized for analysis. The unit of analysis had dual identification: subindustry X state (36 subindustries X 51 states = 1836 cases). Since the unit of analysis had dual identification, pay data (unit of study) from the 36 subindustries represent the dataset for both questions.

The ACS data are archival and publicly accessible, indicating that no participant approvals were needed. Sample and target sizes were the same because the archive includes 2.1 million data points. The original 2017 ACS dataset included 3,526,808 responses. The final data set consisted of 2,145,639 data points because the United States Census Bureau only accepts fully completed surveys. The original 2.1 million data points were compared to 1,834 data points for analyses (i.e., 51 states (including D.C.) and the 36 subindustries within each state). District of Columbia did not contain two data points. The data from two subindustries resulted in a total dataset of 1,834 compared to 1,836. The two subindustries not represented in the District of Columbia are within the significant Natural resources industry, construction and maintenance. The two subindustries are farming, fishing, forestry, and construction and extraction occupations.

The United States Census Bureau has a minimal standard confidence level of 90%, with the margin of error (MOE) = 1.645 x S.E. S.E. stands for Standard Error (S.E.), the foundational measure of the variability of an estimate due to sampling. The Census Bureau states alternate confidence levels in data 95% and 99%, MOE = 1.96 x S.E., and 2.58 x S.E. Achieving the highest level of confidence in information is critical; utilizing a larger geographical size and combining estimates across characteristics and geographies lowers the risk of estimate sampling variability (Fuller, 2018). This researcher used a large eographic size of all traits to achieve 99% confidence in data integrity.

Table 3: United States Census Bureau Confidence Chart

Confidence Level	Margin of Error (MOE)	MOE, for Example Estimate
90%	1.645 x S.E.	+/- 3,778
95%	1.96 x S.E.	+/- 4,501
99%	2.58 x S.E.	+/- 5,925

2.2 Instrumentation

The data source used in this study was the U.S. Census Bureau, which collected the data through the American Community Survey (ACS). The 2017 ACS collected data from 2.1 million public sector employees. The United States Census Bureau collects data through two survey methods: online and paper. The United States Census Bureau seeks to obtain a significant majority of data collected through the website, online survey, and a mail-in option. The U.S. Census Bureau results are required under law 13, U.S. Code, Sections 141, 193, 221, and inform how 675 billion dollars of federal dollars are dispersed across the country. The distribution of 675 billion dollars is 29 percent of all United States federal assistance.

2.3 Data Analysis

Two one-way ANOVA analyses were used to compare gender-related pay equity across states and industries. IBM SPSS statistics software was used for the entire analysis. Previous researchers have analyzed incomplete data without national data broken down by state, requiring a larger, more diverse sample size (Blau & Kahn, 2017; Cortés & Pan, 2019; Goldin, 2017; Obloj & Zenger, 2020). The minimum sample size for this quantitative, nonexperimental, comparative research was estimated in G*Power 3.1.9.7. for two one-way ANOVAs (fixed effects, omnibus, one-way) with the same dependent variable and distinct, independent variables. The input included an expected medium effect size (f = .25), corrected alpha (.025), minimum power .95 (meaning 5% risk of type II error), and the maximum number of compared groups (51). The estimated minimum sample was 816 cases (gender-related pay ratio between men and women), with complete data for each research question (see Appendix F). The researcher added that 15% (123 cases) discard outliers or use nonparametric tests in case of unresolved assumption violations for the preferred parametric analysis. The minimum sample size was raised to 939 instances. The final sample included 1,834 cases (gender-related pay ratio between men and women) and exceeded the minimum sample size for both research questions.

IBM SPSS 25 premium statistics were performed with a multi-step process.

1. State data were downloaded from the United States Census and American Community Survey databases in a CSV format importable to IBM SPSS premium statistics software.
2. Each state, the District of Columbia, and industry was assigned a number representing analysis for SPSS.
3. A state and the District of Columbia data point included 36 individual industries within each state and the District of Columbia.
4. State and the District of Columbia data were calculated to represent a total dataset of 1,834 data points for analyses (51 states, including D.C.) and the 36 subindustries within each state).
5. A CSV file was organized to represent the gender-related pay equity for 1,834 data points for analyses (51 states, including D.C.) and the 36 subindustries within each state).
6. The five major industries are defined from the original 36 subindustries. Archival data provide significant industry data points.
7. The CSV file was imported into IBM SPSS 25 premium statistics software.
8. The analysis process compared the means through the gender-related pay equity rate test of the variable of the 1,834 data points.
9. With state data collection into IBM SPSS format, a CSV file was imported into IBM SPSS 25 premium statistics software.
10. The six assumptions for one-way ANOVA were tested using the Shapiro-Wilk, Levene, and Kolmogorov-Smirnov tests.
11. If the sample failed assumptions, then a nonparametric test had to be performed for both sets of independent groups.
12. IBM SPSS univariate options were set to descriptive statistics and homogeneity of variance test.
13. The level of statistical significance was corrected to .025 to mitigate inflation of type I error (Bonferroni, 1936).
14. The one-way ANOVA analysis assessed data interaction utilizing a general linear model and univariate analysis.
15. The univariate analysis variables defined a dependent variable of rate (gender-related pay equity), state, and industry factors.
16. IBM SPSS was used to analyze the data.

III. RESULTS

In this nonexperimental comparative study, the researcher compared data collected from the United States Census and the American Community Survey in 2017. The dataset enabled the researcher to examine a nationwide sample. The nonexperimental comparative method provided the research framework to compare gender-related pay equity between men and women in all 50 states, the District of Columbia, and five significant industries (36 subindustries).

The dependent variable was gender-related pay equity. This variable was operationalized as the proportion of women's pay relative to men's pay at the subindustry level by state. In addition, the sample of data is per individual state data in the United States. The descriptive statistics summaries of the gender-related pay equity are shown in Tables 1 and 2. The mean gender-related pay equity for the general population is 74.73% (SD = 14.24%).

The highest gender-related pay equity in the dataset is 118.16%, while the lowest gender-related pay equity of the general population is 32.71%, shown in Tables 1 and 2. It should be noted that male samples have higher pay data than female samples because the percentage is below 100%. The results mean that men are in favor of women (women are paid less than men). Thus, a gender-related pay equity issue was observed; however, the significance of the difference in gender-related pay equity was determined using a one-way ANOVA to determine a significant difference in gender-related pay equity by states and industry of the United States public sector.

Table 2 refers to the revised composite abuse scale (CAS_R-SF). The revised combined abuse scale refers to the relationship, meaning a current partner. A primary interpretation of CAS_R-SF is to validate the reliable brief of self-reporting measurement developed using a mixed-method approach. The majority focus of CAS_R-SF is on the severity and intensity of the data point captured.

Table 1: Descriptive Statistics Summaries of Gender-Related Pay Equity Data

Median earnings (%)	*N*	Minimum	Maximum	*M*	*SD*
Gender-Related Pay Equity	1791	32.71%	118.16%	74.73%	14.24%

Table 2: Descriptive Statistics for Gender-Related Pay Equity Variables Measured as CAS_R-SF (N = 1,791)

CAS_R-SF	Mean	Median	Standard Deviation	Standard Error	*z*-Skewness	*z*-Kurtosis
Median Earnings	74.73%	74.71%	14.24%	0.34%	-0.02	0.13

RQ1: Are there any statistically significant differences in gender-related pay equity among the 51 states (including D.C.) in the United States public sector?

The results presented in Table 3 indicate a statistically significant difference across the 51 states (including D.C.) in terms of gender-related pay equity, *F (50, 1740) = 1.69, p = 0.019*. The difference is significant because the *p*-value is below the corrected level of significance value (α = .025). No post hoc tests were performed because of the vast number of compared groups (51). Based on these findings, which showed statistically significant differences in gender-related pay equity across the 51 states (including D.C.) for U.S. public sector employees, the null hypothesis for Research Question 1 was rejected.

Table 3: Results of One-Way ANOVA for Gender-related Pay Equity by State

Confidence Level	Margin of Error (MOE)	MOE, for Example Estimate
90%	1.645 x S.E.	+/- 3,778
95%	1.96 x S.E.	+/- 4,501
99%	2.58 x S.E.	+/- 5,925

States with the lowest gender-related pay equity, women were paid lowest to men (measured as the percent difference between the median values for males and females) were Idaho (*M* = 66.91%; *SD* = 16.55%), Utah (*M* = 67.53%; *SD* = 15.35%), Louisiana (*M* = 69.53%; *SD* = 12.66%), Wyoming (*M* = 70.80%; *SD* = 18.93%), and Connecticut (*M* = 71.58%; *SD* = 13.31%). The states with the highest (i.e., best) gender-related pay equity were the District of Columbia (*M* = 81.69%; *SD* = 13.31%), Nevada (*M* = 81.18%; *SD* = 73.86%), Arizona (*M* = 80.67%; *SD* = 11.75%), Vermont (*M* = 79.55%; *SD* = 17.82%), and Maryland (*M* = 79.15%; *SD* = 14.17%).

RQ_2: Are there any statistically significant differences in gender-related pay equity among the five major industries in the United States public sector?

The categorical independent variable defined five groups that were compared: (1) management, business, science, and art occupations; (2) service occupations; (3) sales and office occupations; (4) natural resources, construction, and maintenance occupations, and (5) production occupations. A level of significance of .025 was also used in the one-way ANOVA. The one-way ANOVA results determined the importance of the difference in gender-related pay equity by industry; the results are shown in Table 4. The one-way ANOVA revealed a significant difference in gender-related pay equity among the five major industries, $F(4, 1735) = 17.00$, $p < .001$ *(Table 4)*. There is a significant difference because the *p*-value corresponding to the *F* statistic is lower than the corrected level of significance ($\alpha = .025$). It is important to note that the analysis of the significant industries had 51 fewer data points since "civilian employed population 16 years and over with earnings" does not have a specific industry since it represents all data points that were not explicitly classified under one of the five major industries. The post hoc test results of the Games-Howell tests (Table 5) identified the statistically significant differences for multiple pairings of groups. Specifically, there were substantial differences in the gender-related pay equity between management, business, science, and art occupations and natural resources, construction, and maintenance occupations ($p < 0.001$) by a mean difference of 4.34%. There were significant differences in the gender-related pay equity between management, business, science, and art occupations and production occupations ($p < 0.001$) by a mean difference of 8.35%. There were significant differences in the gender-related pay equity between service occupations and natural resources, construction, and maintenance occupations ($p = 0.01$) by a mean difference of 4.14%. There were significant differences in the gender-related pay equity between service occupations and production occupations ($p = 0.001$) by a mean difference of 4.75%. Also, there was a significant difference in the gender-related pay equity between sales, office, and production occupations ($p < 0.001$) by a mean difference of 5.43%. There was a significant difference in the gender-related pay equity between natural resources, construction and maintenance occupations, and production occupations ($p = 0.04$) by a mean difference of 4.01%.

Table 4: Results of the One-Way ANOVA for Gender-Related Pay Equity by Major Industry

	Sum of Squares	*df*	Mean Square	*F*	*p*
Between Groups	13,660.15	4	3,415.03	17.00	<0.000*
Within Groups	348,449.65	1735	200.83		
Total	362,109.80	1739			

**Significant difference at the level of significance of 0.025*

Table 5: Results of the Games-Howell Test for Gender-related Pay Equity by Major Industry*

(I) Industry	(J) Industry	Mean Difference (I-J)	*S.E.*	Sig.**	95% Confidence Interval	
					Lower Bound	Upper Bound
1	2	0.20%	0.87%	1	-2.18%	2.58%
	3	2.91%	1.25%	0.14	-0.50%	6.33%

	4	4.34%	1.16%	0.00**	1.18%	7.50%
	5	8.35%	1.11%	0.00**	5.31%	11.39%
2	3	2.72%	1.35%	0.26	-0.97%	6.41%
	4	4.14%	1.27%	0.01**	0.68%	7.60%
	5	8.15%	1.23%	0.00**	4.80%	11.50%
3	4	1.43%	1.55%	0.89	-2.81%	5.66%
	5	5.43%	1.52%	0.00**	1.29%	9.58%
4	5	4.01%	1.44%	0.04**	0.06%	7.95%

** Industries: (1) management, business, science, and art occupations; (2) service occupations; (3) sales and office occupations; (4) natural resources, construction, and maintenance occupations; and (5) production occupations.*
*** The mean difference is significant at the 0.05 level.*

The comparison of means in Table 6 shows that the industries with the highest gender-related pay equity (i.e., the lowest percentage of female earnings relative to male earnings) were production occupations (*M* = 68.18%; *SD* = 11.84%) and natural resources, construction, and maintenance occupations (*M* = 72.18%; *SD* = 16.53%). The industries with the lowest gender-related pay equity (i.e., the highest percentage of female earnings relative to male earnings) were management, business, science, and art occupations (*M* = 76.53%; *SD* = 12.29%), followed by service occupations (*M* = 76,33%; *SD* = 14.95%). These results provided evidence of statistically significant differences in gender-related pay equity across the five primary industries for the United States public sector. Based on these findings of the one-way ANOVA, the null hypothesis for Research Question 2 was rejected.

Table 6: Descriptive Statistics for Gender-related Pay Equity across the Five Major Industries

Main Industry *	*N*	*M* (%)	*S.D.* (%)	Min (%)	Max (%)	*z*-Skewness	*z*-Kurtosis
1	810	76.53	12.29	37.55	116.33	-0.07	0.52
2	391	76.33	14.95	32.71	116.42	0.00	0.07
3	153	73.61	20.01	37.03	111.03	-0.15	-1.22
4	184	72.18	16.53	35.83	118.16	0.25	0.01
5	202	68.18	11.84	36.92	114.34	0.37	0.72
Total	1740	74.80	14.43	32.71	118.16	-0.03	0.06

**Note. Main industry classification: (1) management, business, science, and art occupations; (2) service occupations; (3) sales and office occupations; (4) natural resources, construction, and maintenance occupations; and (5) production occupations.*

IV. DISCUSSION

The study results have profound practical implications and applications regarding gender-related pay equity. The study results suggest that gender-related pay equity is significantly influenced by the individual state in which a woman lives and industry. As stated before, the adverse effects of gender-related pay equity are felt throughout our economy and society. Pay equity is a topic that affects 74.6 million women workers in the civilian labor force (DeWolf, 2017). Equal pay between men and women would reduce poverty for working women from 8.2 to 4 percent. Each of the 50 states would benefit from increased funds into their economies (Status of Women, 2020). Another adverse effect of gender wage inequality is that gender-related pay equity contributes to increased rates of anxiety and depression among women (Platt et al., 2016). In a partnership with the Center for Workplace Mental Health, the American Psychiatric Association expressed significant concern about gender-related pay equity. The President of the American Psychiatric Association, Renee Binder, MD, stated that gender-related pay equity is more impactful than economic issues and contributes to mental disorders (American Psychiatric Association, 2020). Researchers have shown that income inequality increases the risk of obesity and heart attack (Pabayo et al., 2018).

Scholars have suggested that gender-related pay equity is significantly based on the state of the United States; therefore, more resources can be implemented in areas of need. Such resources can include money, economic pressure, social pressure, and education. Because gender-related pay equity has significant adverse health effects, there is a need to increase the country's mental and physical health resources. Federal funding can be withheld from states for not following federal laws.

4.1 Future Implications

The implications of finding out that states have not adhered to previous legislation will create challenging questions. Negative findings could cause a halt in billions of dollars of federal funds. Federal funding is meant to assist the state in infrastructure, education, relief, and economic benefits. This completed dataset will provide practical applications as the blueprint of gender-related pay equity, providing Americans information to apply legislation and political pressure for change and benefit 74.6 million American women workers. States of the United States are not protecting the women that live within them. The mental, physical, social, and economic health of these women is negatively affected by gender-related pay equity. It has been discovered that individual states are not protecting women workers. State governments', businesses', and organizations' failings can no longer go unnoticed. Future researchers have provided the framework for assessing why their state influences gender-related pay equity. More state and industry-specific research can be conducted to evaluate gender-related pay equity at the state and industry levels.

4.2 Declaration of Conflict of Interest

The author declares no conflict of interest.

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I. INITIAL CONSIDERATIONS

In the early morning hours of May 16, 1992, around three thousand landless workers occupied a part of the Ipanema farm in Iperó/SP, a space that since 1589 (when iron ore was found in the Araçoiaba hill) has been the object of exploration, first from the Portuguese crown and, later, the federal government, through the activities of the Ministry of Agriculture. This space is known as the Ipanema farm, in reference to the name of the São João de Ipanema steel mill, which operated there from 1808 to 1895. In 1937 the area was transferred to the Ministry of Agriculture, functioning as a large test farm until its deactivation in 1990 (ICMBio, 2017). The result of the use of this space was the degradation of the area, a reality found and experienced by the families of the camp installed there.

Thus, the Ipanema farm, no longer explored in the late 1980s, was used as a living space for families organized by the Landless Rural Workers Movement (Movimento dos Trabalhadores Rurais Sem Terra - MST), in a process marked by actions such as occupation, encampment and the canvas shack (Sigaud, 2009). Through these actions, the MST, as the main social movement in Latin America, draws the attention of the State and society to the problems generated by the lack of distribution and access to land (Carter, 2009; Hollender, 2015). Even so, the organization of the MST (Zioli et al., 2021) and the representation of social movements in the field are subjects little discussed in studies in Administration (Misoczky, Flores, Silva, 2008; Misoczky, Flores, 2020), where the hegemonic perspective and managerialism dominate the area's production (Carrieri, Perdigão, Aguiar, 2014; Barros, Carrieri, 2015).

Thus, analyzing the practices that produce the MST as an organization is to break with the definitions of organizations shaped by a managerial-functional-formal perspective, opening up to the multiplicity of ways of understanding organizations as social movements and of struggles for a dignified life. Multiplicities involving the actions described by Sigaud (2009) – occupation, camp and canvas shack, and which are taken to build this study, as it deals, as Figueiredo and Pinto (2014) point out, with a moment of transition, capable of break with an old reality of life, allowing access to land to those who never had it, who were always the "never-included" (Gaigner, Kuyven, 2019).

However, this rupture is accompanied by suffering that, in the description of Sigaud (2009), makes the residents of canvas shacks deserving of the reward represented by land ownership. Suffering, marked by the difficulties that accompany the production of life in the camps, are signs of the absence of the productions of the social machine. These productions, which involve both mechanical and organic aspects and which comprise machinic dimensions of subjectivation, follow through stratifications, segmentarities of a capitalistic order that produces human relations and their unconscious representations, which include living, as well as possession and work on land (Guattari, Rolnik, 1996).

There is also no way to understand the MST without looking at gender relations, especially noting the condition of women in this movement. Since the 1980s, the MST has increasingly sought the participation of women, with the condition of establishing gender equality, making many women, in the movement, militant subjects, with rights and duties, with active participation in the conducting, not only of the movement, but mainly of the encampments and land tenure. It is recorded that within the MST, many men were arrested or had to flee and it was women who were the resistance and in charge of the maintenance of the shacks, constituting the main agents of access to land and guarantee of housing for the family. Thus, thinking about Being a Woman in camps and settlements is a critical exercise in the reflection on power, equality, access to land, guarantee of housing, etc (Silva, 2004).

Thus, this article follows the paths of resignification of living, possession and work on land, in the camp of landless workers who, since 1992, on the Ipanema farm in Iperó/SP, have moved from the marginalization of housing in the city to the precariousness of canvas shacks on the farm. Looking at the resignifications present in the memories of the women who are in this camp is to follow the movements of existential refrains and the production of a multiplicity of subjectivation modes, which escape the strata, reorganize, crystallize and delimit new existential territories, which can produce both singular and capitalistic subjectivities (Guattari, 2006).

Amidst this production of refrains that delimit existential territories (Guattari, 2006), new meanings of "home", "dwelling", "land ownership" and "housework" are being built. But, these new ways of perceiving house, housing, land ownership and the activities that are carried out there create a territorialization of Being a Woman, an issue that led to the development of this study, with the aim of understanding the resignifications of living in the productions of singular subjectivities of Being a Woman in the camp of landless workers on the Ipanema farm in Iperó/SP. The data presented were produced as part of a general cartography constituted in this territory, which is the settlement on the Ipanema farm. In the process of undertaking this cartography, Being a Woman became evident, as well as the resignifications of living, land ownership, housework and family care.

This article is organized into five parts, starting with these initial considerations, followed by the presentation of theoretical discussions by Deleuze and Guattari on subjectivities, desire, rhizome and machine. In the third part of this work, the methodological procedures followed for the construction of this analysis are described. In the fourth part, the results of the cartographic study are presented, as well as the analyzes developed from the theoretical constructions presented. Finally, the final considerations of the study are pointed out.

II. PRODUCTION OF SUBJECTIVITIES AND SEGMENTARITIES

For Guattari (2006), talking about subjectivity is dealing with its form of production, endowed with individual, collective and institutional instances, fleeing from the understanding of subjectivity produced by ideological determinations, but opening up to the plurality that constitutes it. Thus, subjectivations, as processes of production of meanings, act in a state of nothingness or inertia and also of a non-human subject (Guattari, 2006; Guattari, Rolnik, 1996). When the author deals with the state of the non-human subject, the reference he is building is of a machine state, that is, an impossibility of limiting technical objects to the composition of its materiality, because there are elements that escape its materiality and constitute machinic dimensions of subjectivation.

The term machine, for Guattari (2006), is placed as an opposition to the term structure, because while the structure repeats the same, machines repeat the difference (Watson, 2009). This difference refers to a way of perceiving life, without needing to substantiate other aspects to produce meaning, being, therefore, particularities and singularities of each individual, moment, object, perception (Deleuze, 2018; Stagoll, 2010). For Colebrook (2002), when emphasizing the difference, Deleuze turns to the individuality of each subject, the potential of the paths not taken, the updated potentialities, in this way, life is perceived as a constant production process.

Machines, for Guattari, are not limited to their mechanical aspects or to the organisms that they are connected to, but are linked to the production of a relationship between individuals and society (May, 2005). Such connections, for Deleuze and Guattari (2004), form circuits that are not independent, but production, "production of productions, actions and reactions, production of records, distributions and reference points; productions of consumption, voluptuousness, anguish and pain" (Deleuze, Guattari, 2004: 9).

What connects, moves and characterizes machines, for Deleuze and Guattari (2004), is desire, which produces, registers and consumes in the same process and at the same time. Desire is understood by everything that precedes the opposition between the representation of the subject and the production of the object (Guattari, 2009). In this way, desire is what overflows from us, it is the flow, the "will to produce, to assert its uniqueness, the power to be" (Dosse, 2010: 167). Thus, desire is not the lack of something, but the production of connections (May, 2005), acting in the productive process of life and producing us as organisms (Colebrook, 2002).

Thus, by opening the unconscious to the machinic dimensions of subjectivation, Guattari (2006) extrapolates the individual-society opposition founded by classical understanding, by also considering the presence of material and immaterial, human and non human elements. According to Dosse (2010: 166), Guattari sought to "anchor the search for the unconscious in its social, collective fabric". Understanding the unconscious as multiple strata of subjectivation placed on top of each other is why Guattari (2006) highlights its opening in a schizo unconscious, facing current praxis. "Unconscious of Flow and abstract machines, more than unconscious of structure and language" (Guattari, 2006: 23). Fleeing from the reductions of the unconscious, the author deals with the machinic dimensions of subjectivity, in which both the semiotic productions of psychological subjectivity, as well as the social, technological, information and communication machines, act on human subjectivity.

Thus, when opening the concept of the unconscious, Guattari (2006) highlights the existence of a machinic unconscious, which acts through signs, symbols, indexes and icons produced by it (Watson, 2009). Therefore, the machinic unconscious makes itself heard, it does not need an interpreter, but it is also not always alive, repressed, sometimes it is visibly dead, exhausted, needing to be reconstructed from scratch (Guattari, 1985). Guattari's machinic unconscious (1985; 2006) combats the perception of a psychologized unconscious that needs to be "accessed", bringing a perspective of the unconscious as an open territory to receive social and economic interactions. Which does not have human subjectivity as central, but as an element of a diversity of sign flows, social flows and material flows (Guattari, 1985).

Even though Guattari (1985) understands that intersubjective and interpersonal logical relationships are essential, they are not the only relationships that participate in the production of the machinic unconscious, as everything is found in the unconscious (faces, animality, landscape, systems of abstract entities). In this way, the machinic unconscious is in a constant process of evolution in history, being able to both follow the past, hide in the imagination, open to the now, and choose what to be. Opening itself this way to a future, to possibilities not yet realized, to the will of power, the pure intensities of that will (Deleuze, 2018) that Machado (2009) describes as a will that wants power in its intense form, being the statement of difference itself.

However, Guattari (2009) adds the organizing effect of capitalism on our desires, producing us as a living body. By taming the flows of desire, capitalism promotes its continuity, by smothering the flows and resistance that can compromise its hegemony. In this sense, Guattari describes us as desiring machines, having desire as fuel, being organized as a body in constant production process, which lives the tension between desire and its organization (Lawley, 2005). This tension described by Lawley (2005) is reflected in suffering, because as a body we suffer from being organized, because this organization, as highlighted by Buchanan (2000), exorcises desire, by reflecting to Deleuze and Guattari (2004) everything that could end with the existence of capitalism.

For Guattari (1985: 20), capitalism does not only exist as an exploiter of the labor force, but it also "manipulates to its advantage the relations of production, insinuating itself in the desiring economy of the exploited". It promotes the organization of flows, acting through desiring machines and producing us as organisms. However, this organization denies other forms of organization, denying what Deleuze and Guattari (2015) highlight as the Body without Organs (BwO), which is a full body, that is, with an unlimited flow of uncontrollable desire (Lawley, 2005). A body that is constantly open to the will of power (Deleuze, 2018), because it is an anti-production, an imageless and unproductive body, where any process of production of desire can be registered (Deleuze, Guattari, 2004).

The BwO represents for Deleuze and Guattari (2004) the possibilities of following lines of flight, escaping from the impositions of strata, following the direction of potency, following a multiplicity that the authors treat as rhizomatics, in reference to the rhizome (from botany) while random, proliferating, not centralized (Deleuze, Guattari, 2017a; Colebrook, 2002). Colman (2010) points out that the rhizome for the authors can be understood as any network of things, which in contact with each other generates new affects, concepts, bodies, thoughts, producing a rhizomatic network that maps the forces that act on the bodies (moving or immobilizing). In this sense, the rhizome is movement, free, acting on the plane of immanence, without dimensions, producing a multiplicity that is not subordinate to the one (Deleuze, Guattari, 2017c). Thus, it portrays the multiplicity that constitutes polyphonic subjectivities, or the different modes of subjectivation (Guattari, 2006).

For Deleuze and Guattari (2017c) the rhizome is constituted by a complex of lines, segmentarity and escape. Segmentality lines can be of the flexible type, which are the result of multiplicities, or the hard type, which are produced by direct binarization machines, but both types are loaded with stratifications, definitions, categorizations. The lines of flight move, on the other hand, tracing ruptures in these segmentarities, metamorphosing the multiplicity that makes up the rhizomes (Deleuze, Guattari, 2015; 2017a). The machinic productions that define the flows of desires operate along lines of segmentarity, categorizing and guiding the production of machinic subjectivities. These categories are produced by the action of power and knowledge relations, which, according to Deleuze (2013), operate in stratifications, which produce lines of segmentarity, which organize flows, but which can also be broken by lines of flight.

Thus, Deleuze and Guattari (2017a) emphasize that the movements that constitute the rhizome are produced by the movements of breaking the lines of segmentarity by the lines of flight, which can be reorganized into other lines of segmentarity. In this sense, the authors point to the existence of microfascisms ready to be solidified, as the lines of flight can close into lines of hard segmentarity, stratifying desires. Observing these stratifications described by the authors, one can see what Guattari treats as the productions of an integrated world capitalism, which instead of acting through processes of singularization, promotes processes of individuation, which organizes men in individualizing patterns, killing power (Guattari, Rolnik, 1996).

Amidst the movements and flows of desires that reorganize these lines, assemblages are constituted, which are established in forms of arrangement, processes of organization and assembly, creating territories and ways of functioning (Livesey, 2010). Because it is constituted through desire, assemblages for Deleuze and Guattari (2017c: 83) do not occur from a “natural or spontaneous determination”, but are constantly arranged and are constantly assembling. Understood by the authors as any and all set of singularities and traits that are extracted from the flow (of the movement operated by desire), being selected, organized and stratified, as the assemblages occur in the strata and from there initially extract a territory, where it will take place and present itself as an invention.

When Deleuze and Guattari (2017c) deal with the territory or territoriality that involves assemblages, it does not refer to geographic territory, but to psychosocial territories that, composed of a variety of categories of decoded fragments, gain property value, creating assemblages, such as "my house", "my friend", "my job", "my neighborhood". Thus, agency is not the subject's action in a given situation or place, but the complexity of the subject's productions that involve material, immaterial, social, human and non-human elements. To understand the production of subjectivations, it is important to realize that through machinic assemblages (content assemblages) there is the production of subjectivations by desire that, operating in the strata, give new meanings to the fragments.

These new meanings are called refrains, which are territorial, territorializing and reterritorializing, and are manifested by expressing the tension that involves the events (Deleuze, 2008; Deleuze, Guattari, 2017b; 2017c). The movements of territorialization, deterritorialization and reterritorialization produced by the refrain, by the territory, produce subjectivations, which may be singular, following the movements and territories created by lines of flight, bringing new rhythms and movements for the production of refrains, existences that move towards the potency. As they can produce refrains of delimitation of existing territories (Guattari, 2006), they crystallize existential agencies, reterritorializing in abstract machines produced by a capitalistic order (Guattari, 2013). They kill and replace the flows of desire with an industrial order that ignores differences and reproduces generalities.

III. METHODOLOGICAL PROCEDURES

This research is one of the reliefs observed during the cartography developed on the Ipanema farm. For this work, we followed the paths of resignifications of living, land ownership and housework, in the productions of singular subjectivities of Being a woman in the landless workers' camp, established in 1992, on the Ipanema farm in Iperó/SP. The action of cartography has gone beyond the records of maps of spatial landscapes, an activity specific to geography (Sanz, Wyttenbach, 2011), involving forms such as social cartography and its political and social engagement in the production of territories (Gomes, 2017). But psychosocial landscapes are also mapped (Rolnik, 2016), and it was through these landscapes that it follows, following, producing and being produced amidst the loss and formation of meanings.

Producing research in the form of cartography is not following ready-made packages, as Barreto (2018) describes it as a theoretical-methodological proposal, as it guides the researcher not only at the time of data collection and analysis. Thus, both the theoretical guidelines and the tools used for the development of this cartography, emerged in the course of the process. Data collection took place between April 2019 and February 2020, when the research had to be interrupted due to the Covid-19 pandemic. During this period, data were collected through narrative interviews (Flick, 2004) that ranged from one to two hours. To preserve the anonymity of the participants, they will be presented in this work by pseudonyms, using the work "Seara Vermelha" by Jorge Amado (1946), which places his characters in the midst of the climatic problems of drought in the northeastern hinterland, of ownership of land and relations of power and exploitation. Problems that are also present in the memories produced by the participants of this cartography. For this work, six (6) interviews will be presented during this cartography; all six research participants are residents of area 1 of the Ipanema settlement and were at the beginning of the occupation in 1992. Dinah (1) came from Campinas/SP with her two daughters, a few weeks after her husband. Lurdes (2) and her husband came from the city of Sumaré/SP; first her husband went to the camp and a few weeks later she went with her young daughters. Ernestina (3) and her daughter Noca (4) came from the city of São Paulo/SP; unlike the other women, she waited for her daughters to finish the school year so they all moved to the camp, where her husband had already built the shack. Joana (5) lived in the city of Piracicaba/SP, with her husband and daughter, and after her husband built the shack, they came to the camp. Zefa (6) went to the camp in the first weeks of occupation, accompanying her husband and taking a newborn child.

After the visits, the interviews were transcribed and the narratives analyzed from the conceptualizations of desire, rhizome and territory that involves the production of subjectivities for Deleuze and Guattari. This allowed us to visualize the elements that make up the participants' memories and that are part of the productions that constitute their existence.

IV. RETERRITORIALIZING LIVING IN CANVAS SHACKS

The discussions held here are divided into two topics. The first shows the act of living highlighted by the women who live in the settlement, especially in the first moments of arrival at the Ipanema farm. The second topic showed that in this act of living, appropriating the land, taking care of the family, the forms of working with the land and domestic work were still being established. These segmentations emerge as the acts of living, working, building the shack, caring for the family, being a woman are presented.

4.1 Producing housing in shacks

The narratives about the camp years go through a description of the canvas shacks, which were housing for the families camped for four years. In addition to the women 's reports about the shacks, Ernestina and Noca also showed some photographs of the family that show what their internal and external appearance was like. The biggest highlight was the adaptations carried out by the campers, who were directing this cartography towards the production of questions regarding the meanings of what housing is or what "home" is. This directed cartographic attention to the difference constructed by the memories of these subjects who, fleeing from ready-made packages, standardized models and stratified knowledge, produce new agencies, new ways of living, new territories (Deleuze, Guattari, 2017c) to call "home" or "house".

In this way, the production of life, which follows the movements of the flow of desire, as Colebrook (2002) puts it, is not limited to what is seen, but questions itself about the possibilities that may exist in the future, the becoming, the potentials, the paths not taken. Therefore, producing life through the struggle for land is diving into the unknown, which is the camp in a new space, producing the house under canvas shacks (Sigaud, 2009), and thus producing life from the difference or potency (Deleuze, 2018). Opening up to other productions, work on the land, but also to the absence of stratified elements produced as necessary for the production of life, such as running water, electricity, basic sanitation.

When talking about the period in camp, the first reference that the women interviewed make is living in shacks. What was also part of the constructions we carried at the beginning of this cartography, that camping is moving away from urbanity, putting oneself under the protection of a tent, without amenities such as electricity, running water, in contact with nature. However, this sense of camping exists as something temporary, a momentary living, just days, an escape from urban hustle, and the search for contact with nature, but which will end when it is necessary to resort to the elements of urban life to work, both domestic and professional. It is from this construction of the camp that we receive the reports produced by the participants of this cartography, clashing with the perception that life is not produced in the long term in a camp.

In this process of production of life, it was necessary to leave the life produced in the city, to open up to a new way of living in the countryside, as a landless worker, living in a camp, carrying out activities, as components of everyday domestic life, in canvas shacks. Zefa points out that they lived in the shacks for about four years, “we spent four and a half years under a shack, a canvas shack”. Zefa also commented that after this time, around 1990, families began to spread out across the farm, dividing themselves by the places where their future lots would be.

Thus, hearing about the shacks, their appearance and adjustments made by the families opened up new sensations, in the midst of an apparently known landscape, of the dwelling of landless workers in the camps, but which was being rediscovered by the contrast with the dwellings in the city, that even the simplest ones are still constructions in wood or masonry. About the appearance of the shacks, Dinah describes her impressions the night she arrived at the camp with her two young daughters.

> On the day I arrived, I'm glad I arrived at night and very tired, because the shack was, it wasn't very high, and then João Paulo (her husband's pseudonym) had covered it with coconut leaves, I think to make it fresher and then put the canvas on top and there was a little piece of leaf hanging. And it wasn't very big either, it was tiny because it was just him and the boys, right, after we arrived it got bigger; those things that you kept seeing were a :: a platform with a mattress on top. (Dinah).

Something that caught the attention of Dinah's description was the detail that her husband included in the construction of the shack. The construction of the shacks only with the canvas made it inefficient to protect against the wind and the cold, and also during the day it was not the best place to protect against the sun. By including other elements in the construction of the shacks, such as coconut leaves, the campers produced their living conditions, creating breaks in the lines of segmentarity, creating lines of escape from the stratified uses by the social machine (Deleuze, Guattari, 2017a).

We understand that needing to produce one's existence living in canvas shacks, fighting for the right to access better living conditions, is to force previous living conditions on the subjects, making it difficult and hindering the path that leads to a revolution. Thus, living with the whole family in a small shack, sleeping in a bed that, in Dinah's description, was "a platform with a mattress on top", the subjects act with cunning to overcome, even minimally, the difficulties that come with the fight. Following the multiplicity that constitutes the field of immanence, the subject produces new knowledge, such as the use of other materials for the construction of shacks.

Understanding that the production of life living in canvas shacks portrays the struggle for the right to access better living conditions is not to ignore all the obstacles and difficulties that mark this path of a revolution in the conditions of production of life. Thus, by introducing other elements and materials in the construction of housing in the camp, these subjects produce other refrains, which set new rhythms throughout the territory. Deterritorializing from the old senses, and reterritorializing from new materials and space, following the multiplicity that constitutes the field of immanence and seeking to overcome, even if minimally, the difficulties that accompany the struggle for land. In addition to coconut leaves, Dinah presents the use of another material in the construction of shacks.

> We lived in an aluminum shack that gave people shocks when it thundered and you were leaning against the wall (laughs) [...] It's (made of) this milk carton, you know, these, these materials, you know? So the shacks were made of that, some, right, there were some that were still made of canvas, but it was more resistant, they were more cute, only when it was thundering that it wasn't. (Dinah).

Producing new agencies in the construction of housing in the camp reveals the inefficiency of the canvas shack in fulfilling its housing role. This finding was recurrent in the reports of the participants, showing that, given the adversities of life in the camp, the shack represented a major problem for the safety of families. Thus, driven by this need, the subjects produced adaptations and new uses for materials, such as those used in the manufacture of milk cartons (Tetra Pak packaging or carton packaging). Thus, the aluminum shack in Dinah's description was built with "those milk cartons, it was like a milk carton, it was huge, right, those big rolls that made the houses" (Noca). It caught our attention, as this is not a material often associated with the construction of shacks. Its origin was also not specified by the participants, but not everyone had access to this material, as highlighted in Dinah's speech, who points out that some shacks were still made with canvas.

Adapting the shacks guaranteed greater durability and resistance to the houses, also ensuring the comfort of the residents, "the house that used to be like that was cooler, it wasn't like those black canvas houses, you know" (Noca). Even solving the heat problem during the day, the canvas house was still inefficient to protect residents from heavy rains and winds. The arrival of storms increased the problems and concerns of the campers. Joana says that "the wind took the shacks of many people", because during the rains "that wind would come in and then you see that whirlpool, and then it would enter the shack and as it was black plastic, the shack would burst, wow.". In her description, Joana draws attention to the noise of the wind and rain in the shacks, "a lot of noise, no one could hear (anything else)" reinforcing the discomfort of having the shack as a home.

Listening to the narrative about the storms and the destruction of the shacks makes us think about the desperate situation these people found themselves in, far from the protection guaranteed by a house made of brick or wood, totally subject to the action of time, powerless in the face of this situation. To produce life in the camp was to produce refrains with the difficulties of wind and cold, lack of drinking water, hunger, malnutrition of children and diseases. Thus, reterritorializing the house in the shacks is to produce other meanings for domestic work, for childcare and for the fight for the right to produce life in the countryside.

The women's narratives about the canvas shacks gave us a melancholy condition, because even before starting to carry out research with landless workers, we already knew, from hearing about, the housing conditions of the MST camps. Even so, when approaching these people, it was not possible to remain indifferent to these reports or the sadness they produced. Unlike city dwellings which, despite being simple, were wooden or masonry constructions, with electricity, running water and sanitation, the shacks barely protected from the wind, rain, cold and sun. When talking about living in the camp, Dinah describes the shacks as low, "it wasn't too high", the family shack had been covered with coconut leaf, "I think to be cooler and then (he) put the canvas over and then there were those little pieces of leaf hanging". During the day, the shacks were very inefficient in protecting the residents from the heat of the sun, so, by adapting their construction, inserting other elements, the residents of the camp produce their living conditions, similarly to the rhizomatic effect expressed by Deleuze and Guattari (2017a). Along with these new housing conditions come new forms of work, especially domestic work that was a task for women and which we highlight in the next topic.

4.2. Women's work and life in shacks

When Joana tells about life at the camp, she points out that "it was not easy at first, we drank water like mine water, water without filtering, without knowing anything, it was like that, we drank water without filtering" (Joana). In her highlight of the difficulties, Joana points out the type of water that was consumed by the camp's residents. This water was also used to do domestic activities such as cooking, washing clothes and dishes, elements that make up the productions of the social machine about what women's work is.

The women's reports, the memories of their times in the camp are full of elements that constitute the strata of being a woman, the constructions of meanings that relate household chores and childcare as the "role" of women. Thus, life in the camp was produced by these lines of segmentation that place women in charge of taking care of their children and the house (shack). The men, in turn, took care of the work in the fields, preparing the land, planting, harvesting and selling the products. While women directly experienced the restrictions imposed by this new way of producing life, as in Lurdes' description they were "the ones who stayed at home the most", men needed to go out to "try to get a donation, to sell things, in a rush, and the women stayed here".

Such restrictions increased the effort made to carry out chores, as Joana puts it, when she says that tasks such as washing clothes were carried out in the mine, "I used to wash clothes like that, in the mine". Drawing our attention to the fact that the emphasis of your report is not on the difficulties imposed by the social machine, which in its stratifications delimits and imposes what is the role of women, but that the difficulties faced by women in the camp were in the absence of amenities as washing machine and running water. Even though such amenities do not nullify the lines of hard segmentarity that define domestic work as a woman's "role", they facilitate the development of this work, making it less uncomfortable or less painful. Thus, if life in the camp demanded even more from women to do chores, this requirement exists through the reproduction of refrains of delimitation of existential territories of Being a Woman.

Aspects related to the roles imposed on women in the MST is a subject that has been discussed by other researchers, such as Santos (2019), Silva (2003) and Gonçalves (2009), who highlight the dichotomy existing in the history of the MST, which, at the same time that it struggles for a fairer and more egalitarian society, it reproduces the oppression of defining what it means to be a woman. It is in this sense that Silva (2004: 280) highlights in his study domestic tasks as belonging to women, producing the house as "a gender boundary". Thus, even with the questioning of the MST leaders about the little participation of women in representational work, the author emphasizes that "it is important to think that, if the house belongs to women, the rest seems to belong to men", this sexual division of works provides women with "commissions" in the organization of the camp, such as health and education, while production and finances are run by men (Silva, 2004: 280).

Amid the constant production of meanings of what it is to be a woman, mother, wife, worker, and the exclusion of elements from urban life and the inclusion of other elements that directly interfere in the execution of "female tasks", subjectivities of these women in the camp were produced. A subjectivity produced by women who renounced the products of a social, oppressive, generalist machine (Guattari, 1985), which ignores their difference as a woman, but which produces amenities, facilitators and normalizers of this defining segmentarity (Deleuze, Guattari, 2017a) line of the woman's role. Thus, it is understood that refrigerator, gas stove, washing machine, running water, electricity, are presented as elements that would offset the oppression of the definition of Being a Woman as economically active, but which is also responsible for the house and children.

In the initial period of the camp, at "two in the morning, I used to scream: the police are coming, (we were) the fools who picked up their children and walked to the street, even at the gate, wasn't it? We had to walk, son crying" (Lurdes). The responsibility for caring for their children made these women live with insecurity and fear of police action, in addition to their task of taking care of the house and children and the demands that accompany the struggle for land. They had to prepare for possible police action, but at the same time, be concerned about the needs of their children, given the hunger and cold that accompanied life in the camp. In this sense, the description made by Lurdes emphasizes that women heard their children "screaming because of hunger and cold, who saw their children crying because of hunger", increasing their demands and concerns in caring for their children.

But, how to take care of the house and children when there is no food? Depending on donations, the campers divided the food among the families; in these divisions the young children who needed milk were the most affected. Ernestina's account of the camp brings food as something that was not constant in their lives.

[...] sometimes there was something to eat, sometimes there wasn't. I

> remember that my oldest girl, for breakfast, she would grind some corn, right, and make hominy, then cook to eat, right, that's what we had to eat. And we received a lot of donations, right, we lived on donations, because as I was here, no one could go out to work, right, we had to stay here. (Ernestina)

Food donations were what guaranteed the little that the camp's residents had to eat, however the donations decreased over time, increasing the difficulties of the families. With the planting that started right at the beginning of the camp, the residents were also able to count on other foods. When production was sufficient, it ended up not guaranteeing a variety of food in the families' meals, which Ernestina highlights when describing a situation that occurred when the camp harvested the planted corn. Thus, the paths of escape lines for the campers were built, in their search for a change in living conditions through access to land, which also followed many lines of segmentarity, through strata that accentuated the difficulties of production of subjectivities, mostly women.

In Ernestina's speech, the issue of work also drew attention, as in the struggle for settlement on the Ipanema Farm there was no possibility of going out in search of work outside the occupied lands. Even the exits from the camp were controlled by the organizers, and the whole family was not allowed to leave, guaranteeing the possibility of returning to the camp if prevented by the police. Thus, the production of new meanings or subjectivations (Guattari, 2006; Guattari, Rolnik, 1996) occurs through assemblages that are essentially territorial (Deleuze, Guattari, 2017c).

The production of meanings for these workers was deterritorialized from other forms and working conditions, which required the search for new territories, thereby producing new meanings and agencies. In this way, they reterritorialize in working the land and the family and in selling their production, new assemblages, which are in constant movement through this territory, characterizing the refrain for Deleuze and Guattari (2017b; 2017c), which is a constant development of becomings, of becoming a woman, becoming a woman-mother, becoming a woman-worker without land, becoming a woman-camper of the MST.

Thus, more than the difficulties initially faced, the participants in this cartography reinforce the feeling of belonging and unity of the group, the unity that occurs in the face of life's difficulties and that day after day shaped their experiences and productions of life and the present experienced. For Ernestina, the beginning of the camp was also a good time, as there was more unity between people: “it was a very good time in the camp, because people were more united, right”. Likewise, Dinah highlights the union and proximity of the families in the camp, which could have continued if they had opted for the settlement in the form of an agri village.

> So the people were very united there, very close, right, I think that after the settlement left, this was one of the things that people felt the most, right, because then each one went to their lot and the people ended up taking care of their life, people distanced themselves a lot. So I think that was one thing, a

> negative point, when the settlement and the agri village issue came up, people didn't want it because they heard some negative agri-village stories and it turned out that suddenly no one wanted to stay in the agri-village, each one preferred to stay on the individual lot. But I think that in agri-villages we have some more benefits, right, but anyway we're settled like this. (Dinah)

Therefore, when the reports point out new ways of living the daily life, of producing and consuming what is imposed on them, it is not something that was in the past, isolated and inaccessible, but something that accompanies them, that produces them as subjects that has the fight as a constant aspect of the present. For the interviewees, the fight was not an aspect that was lost in the past or forgotten when relations with the city hall and with the administration of FLONA Ipanema (National Forest of Ipanema) were pacified, or when the lots were divided. The struggle is still daily for the maintenance of work in the field and the sale of products. In their daily struggle, the residents use, in their own way, what is imposed daily by the hegemonic forces, producing collective assemblages of enunciation from the struggle. Thus, it is possible to infer that the memories present in the production of subjectivities of the participants allow the construction of their existence, ignoring the machinic capitalistic productions. It is from movements of flight, breaking with the capitalistic stratifications, that these women produce the cycles of being a worker, of being a rural dweller, of Being a Woman.

V. FINAL CONSIDERATIONS

Continuing through the reinterpretation of the act of living in the productions of the subjectivities of the residents of the Ipanema settlement in Iperó/SP led to the encounter of the elements: canvas shacks, hunger, food, housework and family. The production of these elements in the participants' memory was loaded with other elements that shape life in the city, placed as elements of comparison in these narratives, highlighting the breadth of the difficulties faced. Thus, looking at living is to perceive the movements produced by the subjects, the flows of desire, the desire for life, which was and is ignored by the social machine.

But, the dynamism of the flows and movements produced by desire cannot be erased, these flows of desire struggle to free themselves from the limitations and impositions of paths, producing a rhizomatic multiplicity. These movements produced by the flow of desire design multiple ways to produce life, which prevents us from understanding the subject as the one who passively accommodates and accepts the impositions. But to understand the subject from the understanding of the rhizomatic multiplicities produced by the flows of desire, is to understand the subject as the one who can break the segmentarities, opening up to the power and to the multiple possibilities of production of life. In the situation mapped in this article, we found in the memories produced by the women the productions of life as landless workers, as campers with canvas shacks as housing, needing to reinvent the meanings of domestic work.

However, in the situation of women in the camp, this multiplicity did not distance itself from the regime of abstract machines produced by a capitalistic order, delimiting the roles and unconscious representations of Being a Woman. Thus, we find in the participants' memories a reterritorialization of the suffering of Being a Woman. They began to accumulate other obligations, and must find, despite the exhaustion of domestic work, the insecurity and limitations of lack of food, reasons to continue fighting for the land. A fight that can guarantee them a space to live and work, but that will not transform the delimiting strata of their condition as a woman.

Looking at these memories produced in times of struggle makes us question the production of industrial subjectivities, which naturalize roles and which remain firm even with the production of other existential territories. In the end, we understand the importance of looking at the questionings of the capitalist order and its productions, to understand to what extent it interferes in the productions of our unconscious representations.

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Dr. Nina Farisha Isa

INTRODUCTION

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For many brands today, multichannel touchpoints in the digital marketplace take a significant portion of the total encounters with a brand or products (Rudy, Harjanto Prawobo, Asnan Furinto and Mohammad Hamsal, 2021; Kimiagari, and Asadi Malafe, 2021; Zhang, N., and Yuan, Q. J., 2021). All brands will have to think about the experience, they are delivering not only in real life but in the realm of binary, bits, and bytes. Maximizing and leveraging exceptional experiences (i.e., WCX and DCX) across new and ever-fluid communication channels will be a primary goal of marketers moving forward. However, the phenomenon of a consumer simply deciding to leave an e-commerce transaction has come to be referred to as shopping cart abandonment. Thus, an engaged consumer is not always guaranteed to buy from e-commerce website. With many people shopping online regularly or looking for goods and/or services to buy online, shoppers find themselves in a state of indecision. Not only do they admit to spending time researching, but shoppers also feel overwhelmed by the number of options they encounter when browsing. For example, when they could not find a coupon code that involves consumer experience based on the interactivity of the website interface. Some of the consumers are concerns about the payment security that involves the elements of usability.

Nevertheless, as the theoretical and empirical work has emerged in different directions, the theoretical roots of online consumer experience have grown more ambiguous in relation to e commerce buying decision and behavior (Klaus, 2013; Hoffman and Novak, 2009; Demangeot and Broderick, 2006). By identifying the significant antecedents of online consumer experience, the findings of this paper will add to the literature by proposing a theoretical basis for online consumer experience within the e-commerce buying decision frame. Thus, it will also provide a valuable tool for practical reasons, for both academics and practitioners regarding how to measure and evaluate online consumer experience.

This study seeks to bring together the extant work on online consumer experience and e commerce buying decision in order to advance the questions of: (i) What are the core conceptual elements of online consumer experience within the e-commerce buying decision frame? (ii) What are the underlying elements of online consumer experience within the e commerce buying decision framework? and, (iii) How can we integrate insights from these questions to develop an empirical measurement approach that is faithful to the theoretical concept of online consumer experience within the e-commerce buying decision frame? Our exposition begins with a systematic review of the online consumer experience and e-commerce buying decision literature. This paper describes a step-by-step approach to develop the constructs of online consumer experience within the e-commerce buying decision frame.

The paper begins with a discussion on the concept and definition of online consumer experience. Next, this paper discusses the development of its constructs and measurement items. Motivated by and using constructs extracted from the literature review, this study derives an integrated conceptualisation of online consumer experience and employs it in the development and testing of a measurement for online consumer experience within the e-commerce buying decision frame. Finally, this paper concludes with a discussion and conclusion.

II. NEW PERSPECTIVES OF ONLINE CONSUMER EXPERIENCE THEORY ON BUYING DECISION

The online consumer experience can occur in various online activities including but not limited to e-commerce (Bridges E and Florsheim R. 2008), e-learning environments and online gambling (Hoffman DL, Novak TP, 2009). In the e-commerce context, online consumer experience can be seen as the extent to which consumers are engaged in interacting with the brand-related stimuli. As it becomes harder for the brands to engage new generation consumers, the importance of online consumer experience becomes more prevalent. Various studies on online consumer experience in recent years can be shown as an indicative of increased attention on the phenomenon (Brodie RJ, Ilic A, Juric B, Hollebeek,2013; Shim SI, Forsythe S, Kwon WS.,2015). Novak, Hoffman and Duhachek (2003) argue that consumer experience is a useful construct for describing and explaining human computer interactions. According to Novak, Hoffman and Duhachek (2003), consumers actually experience flow based on their web experience that investigate into consumer's' goal-oriented and experiential-oriented behaviours.

Hoffman and Novak (1996) propose a model in context of online consumer navigation using 'flow', a psychological construct. The construct was manifested through a feeling of seamlessness during navigation, intrinsic enjoyment, and lack of self-consciousness. (Hoffman and Novak, 1996). Rose et al. (2012) proposed the components of online consumer experience: cognitive experience and affective experience along with its antecedents and outcome. Web experience is a consumer's total impression and expectations about the company e-commerce website that consists of the element's usability, interactivity and aesthetics (Constantinides, 2004).

According to Constantinides (2004), web experience is a combination of online functionality, information, emotions, cues, stimuli and products or services and/or a complex mix of elements that extend beyond the 4Ps of traditional marketing mix. The web experience embraces elements like searching, browsing, and finding, selecting, comparing and evaluating the information as well as interacting with the online firm. Constantinides (2004) describes web experience as the consumer's total impression about regarding the online company, not only addressing the consumer's' product needs and expectations but also assisting the consumers through the steps of the buying process which is likely to influence the buying decisions of the online consumer. Constantinides (2004) also proposes web experience to be the major parameter of consumers' influences for any e-commerce site and the consumer's' whole overall perception about regarding the online company. Meanwhile, for traditional businesses that are expanding their business to include Internet presence, the quality of online experience is the issue that requires special attention. For instance, poorly designed and dysfunctional e commerce sites can be potential threat for the online portion of the business online. Novak, Hoffman and Duhachek (2003) argue that flow is about consumer's goal-oriented and experiential-oriented behaviour in online environments. Another closely related construct to online consumer experience is the online shopping experience which is a holistic and subjective process resulting from interactions between consumers, shopping practices (including tools and routines) and the online environment (e.g., shopping websites, online consumer reviews, and social media) (Trevinal and Stenger, 2014). By analysing studies on online experience and shopping experience, several facets of online shopping experience can be driven such as affective, cognitive (Hoffman and Novak, 2009; Pentina, Amialchuk, and Taylor, 2011; Verhoef et al., 2009), physical, sensorial (Babin and Attaway, 2000; Novak et al., 2000), value, rituals, symbols (Holbrook, 2006; Mathwick, Malhotra, and Rigdon, 2001; Nambisan and Watt, 2011), 42 social (Borges, Chebat, and Babin, 2010; Pentina et al., 2011), and flow (Hoffman and Novak, 2009; Mathwick and Rigdon, 2004).

III. ONLINE CONSUMER EXPERIENCE: CONCEPT AND DEFINITION

This study attempts to extend the knowledge of online consumer experience (WCX) from flow theory in which WCX is the activity of consumers' total impression based on interactions and transactions with combinations of notions, emotions and impulses that caused by the designs and other marketing elements of the online presentation or in other word the e-commerce website and application (Constantinides, 2004;2005). The concept of online consumer experience (WCX) by Constantinides (2004) defines web experience as online consumers' total impression of getting the e-commerce website information that includes a combination of online functionality, information, emotions, cues, stimuli and products or services that extend beyond the 4Ps of traditional marketing mix. Constantinides (2004) describes that web experience is not only the consumer's total impression about regarding the e-commerce website but it is also addressing the consumer's product needs and expectations as well as assisting the consumers through the buying process steps of the buying process which are likely to influence the buying decision of the online consumers. The web experience embraces elements like searching, browsing, and finding, selecting, comparing and evaluating the information as well as interacting with the online firm.

Lorenzo, Oblinger and Dziuban (2007) suggest that website navigation and online product presentation are the crucial elements to user-friendly e-commerce website and have significant effects on the shopper's' first impressions of online vendors. Furthermore, Ha and Stoel (2012) denotes that in online consumer web experience, element hedonic elements are related to experiential stimuli. The experiential stimulus is focused on the experiential online shopping motives that where consumer seeks benefits from online outlet selections rather than shopping the given product. For instance, the enjoyment that the consumers experience is actually when they join the brand membership website or the pleasure that they obtain during searching product information. This is similar to Wang and Fesenmaier (2004) findings where, the hedonic driver factor motivates consumers to increase participations more and allocate occupying their leisure time in the with web experience activities. Similar studies have also indicated that perceived enjoyment as an intrinsic motivation that has significant impact on a user's technology acceptance especially for hedonic systems (Davis et al. 1992; Koufaris, 2002; Van der Heijden, 2004). They uncover the fact that if when using a computer, laptop or smartphone can bring generate them fun and pleasure, users will be intrinsically motivated to adopt it the habit.

As noted above, web and digital consumer experiences often has rich entertainment functions and users can will obtain great enjoyment when utilising e-commerce website. Constantinides (2004) points out factors that consumers' experiences from the websites is consist of three main factors, namely: (1) functional, (2) content and (3) psychological. Constantinides and Geurts (2005) further define functional category as the online experience of the functions, easy to ease of usage and search mechanisms as well the interactive part of the website. Meanwhile, content category is the factors that the website's offerings in terms of their offer aesthetics, tangibles and attractiveness direct to the consumers. Lastly, the psychological category is denote the website's credibility to communicate and ensure users' of the vendor's' integrities in order to persuade attract and maintain consumers. In this study, online consumer experience (WCX) is defined as the online web consumer experience (WCX) that consist of combinations of online functionality, information, emotions, cues, stimuli about the products or services that extend beyond the 4Ps of traditional marketing mix (Constantinides et. al., 2005). As such, this study attempts to separate and derive a measurement for online consumer experience (WCX) in retail context. Addressing the measurement of consumer experience, from different perspectives is important as it represents a shift in our understanding from the managerial control of some 'thing' (e.g., retailing strategy) (Zolkiewski, et al., 2017). The online consumer experience scale is constructed to cover the domain of consumer experience in a retail setting. For this study, the domain of online consumer experience (WCX) is considered as a component that involves one's cognitive and affective system with the generation of moods, feelings, and emotions as identified by Lorenzo et. al. (2007). As such, this study attempts to examine the dimensionality of online consumer experience from the structural dimension approach (Constantinides, 2004, Constantinides et al. 2005 and Lorenzo et al. 2010). Thus, the consumer web experience embraces elements that include the following dimensions of (1) usability web experience; (2) interactivity web experience; and (3) aesthetic web experience.

Online consumer experience has differences between handheld devices (smartphones and tablets) and PCs (laptops and desktop computers). Matarazzo et al. (2021) demonstrates the importance of including hedonic elements in the design of web pages (accessible from PCs). On the other hand, apps (accessible from handheld devices) should facilitate concentration and encourage the user's time distortion to reach the flow state, whereby e-commerce companies are designing their online platforms. The impact of digital transformation on consumer value creation and highlighted that digital channel contribute to the innovation of an organisation's business model. Such transformation also helps to create new distribution channels and new ways to create and deliver value to consumer experience. Additionally, digital transformation impacts technological market expansion when organisations are seen as embracing digital innovation (Jafari-Sadeghi et al., 2021). Such conclusions and arguments indicate that the enhanced use of digital technologies increases an organisation's innovation performance by providing greater digital consumer experience (Usai et al., 2021). Another study (Jessen et al., 2020) empirically demonstrated the sequential mediation process connecting the use of technological advances with consumer engagement, consumer creativity and anticipated satisfaction. Additionally, it has been emphasized that consumer involvement plays a central role in explaining the intention to participate in online buying (Sharma and Klein, 2020). Advances in mobile technology and its adoption by many consumers have rendered it essential for firms to redesign interaction and service delivery features to achieve optimum online user experience. Survival in today's competitive e-commerce environment where the competitor is only one click away means that firms must find ways to provide consumers with a unique experience much more than low prices. E-commerce companies have recognized the need to focus on providing a compelling shopping experience. Studies on consumer experience are often conducted on separate channels, online or offline only. Research on consumer experience involving web consumer experience (WCX) and digital consumer experience (DCX) has not been widely studied.

3.1 Conceptualisation of Online Consumer Experience within the E-commerce Buying Decision Frame

3.2 Core Dimensions of Web Consumer Experience within E-commerce Buying Decision Frame

A review of the extant literature revealed that there are three main measures of web consumer experience (WCX): (i) usability of web experience, (ii) interactivity of web experience and ii) aesthetic of web experience (Constantinides, 2004: Constantinides et al., 2005 and Lorenzo et al., 2010).

3.2.1 Usability of Web Experience

Nah and Davis (2002) define usability as "the ability to find one's way around the Web, to locate desired information, to know what to do next, and, very importantly, to do so with minimal effort. Central to this idea of usability are the important concepts of ease of navigation and search" (Nah and Davis, 2002, p. 99). 49 Usability is considered as an important quality criterion of information systems (Preece et al., 1994) and Web sites (Osterbauer et al., 1999). Elements enhancing the Web site usability are the convenience of using the site, the loading speed of the pages, the information structure etc. Creating a user-friendly Web site not only requires high quality, state-of-the-art technology but also thorough knowledge of the needs and characteristics of the potential Web site user. Usability of Web sites has been constantly improving over the years, not only because online firms and Web designers gain more experience but also as a result of technological developments. The usability components include (1) Convenience; (2) easy site navigation; (3) Site findability and accessibility and (4) Site speed. Prior studies indicate that convenience is a prime motivator for online consumer to stop and interact with online vendors. Consumer associate convenience with easy and fast information browsing, shopping and settling of the online transaction. On the other hand, site navigation, information architecture and search facilities/search process, whereby online consumer expect and easily accessible information. The usability component of site navigation also includes search engines that provide fast and reliable results helping consumers to quickly locate information in the Web site. Most online consumers are searching for products and services by means of search engines and online directories thus it is very important that the e commerce website apply a consistent search engine strategy so that online consumers can easily find the site. Web sites must be furthermore accessible by users making use of different types of Web browsers. Moreover, online consumers expect fast loading Web pages (Cockburn and McKenzie, 2001). Flow theory provide a balanced approach that is necessary so that Web sites remain simple to use and secure at the same time.

3.2.2 Interactivity of Web Experience

The interactivity of Internet allows online vendors to enhance the Web experience by presenting the consumer with more personalized services and facilitating interaction with other online users willing to share experiences and suggestions. From the flow theory perspective, interactivity, therefore can be seen as underpinning two of the basic elements namely personalization and networking. Interactive elements are contributing to a positive consumer experience by reducing uncertainty during the online transaction and the cognitive dissonance afterwards. Elements enhancing interactivity are facilities allowing interaction with vendors in case consumers have questions or difficulty to use the site, online helpdesks for technical assistance or support. Networking and the possibility of establishing contacts with other users by means of active or passive interfaces (user's forums, chat-rooms or bulletin boards) are also factors enhancing the Web site interactivity. The interactivity components are divided in two categories: (1) Interactivity with the online vendor. (2) Interactivity with other Web users.

Consumer service/after sales service online, interaction with company personnel and customization are components of interactivity between consumer and online vendor. online consumers expect next to convenient shopping and support in case of problems with products or services purchased. Good organized online or offline helpdesks, efficient reverse logistics, quick response to e-mail complaints and inquiries are some of the issues where marketers and Web designers must focus their attention. As in the case of usability, good knowledge of consumer profiles and needs are of vital importance for the designers of these online services. More research is necessary in order to assess the exact role and effects of such elements as well as the trends in this area.

3.2.3 Aesthetic of Web Experience

According to Arnould and Thompson, (2005) consumers perceive aesthetic were dominated by the consumer sociocultural and ideological factors. Consumers will experience an object aesthetic if it meets the meanings and sociocultural patterns which consumers attribute to a sensory pleasing object. Aesthetic experience relates to the pleasure consumer experiences by interacting with an artistically beautiful and pleasing appearance of a content on e-commerce (Lavie and Tractinsky, 2004). This aesthetic experience affects the level of commitment, consumers show with the content on the e-commerce. More engagement and/or commitment occurs when consumers have an intense aesthetic experience due to visually appealing content (Syrdal and Briggs, 2018). Aesthetic experience can be delivered by creating a content which is dynamic, colourful (Fortin and Dholakia, 2005), pleasant, and animated (Goldfarb and Tucker, 2011; Goodrich, 2011). Previous studies found that aesthetic content on websites can result in more clicks on the content (Cho, 1999; Lohtia et al., 2003) resulting in a positive attitude towards a website (Coyle and Thorson, 2001; Fortin and Dholakia, 2005). Flow theory research shows that consumers use market-produced objects such as the content to experience realities linked to aesthetics (Holt, 2002; Joy and Sherry Jr, 2003; Schau and Gilly, 2003) and this may culminate into e-commerce buying decision behavior.

3.3 Digital Consumer Experience (DCX)

The nature of how communication flows has undergone momentous changes in the past three decades with the widespread penetration of the Internet. As an apparent results, the number of hours spent on mobile phones has been increasing steadily, which boosted the volume of digital consumer experiences for shoppers in making online buying decision (Lee and Kim, 2019). The concept of digital consumer experience (DCX) is defined as the degree to which consumer total impression of usability, interactivity and aesthetics of the e-commerce websites using mobile technologies (i.e., smartphone, tablet and mobile apps) based on their experiences and exposures in the mobile technologies. Several studies found that digital mobility that keep consumers nearby and connectivity are shaping the field of e-commerce to leverage the digital environment to meet the expectations of their consumers especially for brand and businesses in mobile commerce (Sukardi Silalahi and Popy Rufaidah, 2017: Bilgihan et.al, 2016). Many brands have also failed to integrate mobile commerce, social media and e-commerce. Integrated technology use helps with consumer personal experience, including such digital consumer experience as the use of sites, cellular devices, or cellular applications (Fatma, S., 2014). Digital technologies transform a company's consumer-related operations, and thus the company needs to find effective digital business strategies by using digital technologies (Setia, Venkatesh, and Joglekar, 2013). New technologies spur a company to remodel the way it interacts and builds relations with consumers (Straker and Wrigley, 2016). The development of Internet technologies and the increase in the number of Internet users require companies to devise diverse strategies to retain and increase consumers, especially now that ecommerce has become an indispensable part of everyday life (Liu, and Wei, 2003).

Digital consumer experience is a new construct that still focusing on consumer experience (Pine and Gilmore, 1998; Teixeira et al., 2012) or service experience (Klaus and Maklan, 2012; Dube and Helkkula, 2015). Silalahi and Rufaidah (2017) modified the dimensions of the research undertaken by Klaus (2015) to obtain a measurement of digital consumer experience. Its measurements of digital consumer experience are digital service experience, digital image experience, digital touchpoint experience, and digital broadband experience. This type of technology is selected due to its' similar characteristics such as low cost or subscription based, thin infrastructure, ease of use, easy to deploy and these technologies can be adopted on demand (Buyya et al. 2009; Delen and Demirkan 2013; Son et al. 2014). In addition, this technology is agile, independent device and location, easy to maintain, multi-tenet and productive. Moreover, searching for technology support information on a smartphone is known as digital consumer experience (Harvard Business Review, 2016; Chong et al. 2012; López Nicolás et al. 2008; Sheng et al. 2005). Harvard Business Review (2016) states that digital consumer experience is consumer experience through a digital interface (i.e., tablet or smartphone). Moreover, digital consumer experience is related to the digital interface and presentation of electronic word of mouth reviews that involve external links and graphics (Borowski, 2015; WTO, 2015). Researchers and practitioners are eager to understand the factors that contribute to this compelling digital consumer experience as online shopping and consumer connections with electronics providers have changed dramatically (Mehmet A. Orhan and Caleb MacIlvaine, 2014). More marketers recognized the need to for consumer to interact in several digital touchpoints where consumer experience they can reach people with much ease effectively and efficiently, not only with consumers but as well as with potential ones. For many brands today, multichannel touchpoints in the digital marketplace take a significant portion of the total encounters with a brand (Rudy, Harjanto Prawobo, Asnan Furinto and Mohammad Hamsal, 2021). This requires a shift where all brands will have to think about the experience, they are delivering not only in real life but in the realm of binary, bits, and bytes.

The marketing experience will necessitate an automatic flow that utilizes the full realm of time, space, and matter but also no-time (autonomous), no-space (virtual), and no-matter (bits) (Pine and Korn, 2011). Maximizing and leveraging exceptional experiences across new and ever fluid communication channels will be a primary goal of marketers moving forward. Pine and Gilmore (1998) argue that the company's products and services must act as a media for consumer experience. Companies must be able to give consumers exceptional value. The digitalization has been the main focus of the business strategies, including telecommunication industries. Therefore, the purpose of this study is identified and operationalize the digital consumer experience concept based on flow theory by studying relevant literature on consumer behaviour in retail contexts (Bridges E, Florsheim R, 2008; Forsythe S, Kwon WS, 2015). Creating and maintaining online channels that evoke positive emotions and provide engaging digital consumer experiences will help companies gain a competitive advantage. Based on flow theory, the design of the applications in smartphones, android, PDA and handheld technologies must be both useful and fun as part of any digital consumer experience. The design must be dynamics, i.e., interactivity that affect users, and aesthetics make the experience fun and engaging. Easy positioning of websites/apps, ease of use, perceived utility, hedonism and utilitarian features, perceived enjoyment, personalization, and multi-device compatibility are prerequisites for unifying digital consumer experiences.

3.4. Elements and Measurements of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within E-commerce Buying Decision Frame

Web and Digital Consumer Experience buying decision can be promoted through Online Consumer Experience (WCX) initiatives by focusing on three components: usability, interactivity and aesthetic. In this stage, eighteen (18) items are identified as the appropriate measures of web consumer experience within the e-commerce buying decision frame. Table 1 shows the dimensions and items of measurement. The chosen items are adapted with respect to the concept of online consumer experience (WCX) from the literature as discussed.

Table 1: Elements and Measurements of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within the CSR Frame

Element	Definition	Measures
		E-commerce website should....
Usability	Degree to which the consumer perceives the e-commerce website is easy to use and convenience for consumer to search, access and transact (e.g: responsiveness, navigation, download delay) with minimal effort and time based on their experience and exposure of the website	➢ easy to access at any time I want. ➢ navigational aids that are intuitively logical, easy to understand with minimal effort and time. ➢ classification that is easy to follow with minimal effort and time. ➢ convenient to search, access and transact e-commerce activities with minimal effort and time. ➢ variety of search options about the product (i.e., filtering based on price, color and specification) with minimal effort and time ➢ user friendly as the consumer spent with minimal effort and time
Interactivity	Degree to which the consumer perceives the e-commerce website allows consumers to personalize, customize and interact with the content and the website based on consumer experience and exposure of the website.	➢ good keyword search facility that allows me to interact with the product ➢ different interactive way to view the product (i.e., text, audio, moving image, graphic, sound) ➢ interactive platform (i.e., text, audio, moving image, graphic, sound) that helps me to compare products and prices. ➢ interactive customization of the site's content that meet my personal needs and specification. ➢ interactive informational link about the product ➢ multimedia technology such as audio and video that excite much interest towards the product and interact with the content of the product.
Aesthetic	Degree to which consumer perceives the website as being visually aesthetic that evoke pleasure based on their experience and exposure of the website.	➢ fresh and original design that makes me wanting to explore the website ➢ visually attractive appearance that creates much pleasure for me when exploring the website. ➢ innovative and creative that makes the website fun to explore. ➢ visually classy that is intriguing to explore professional that makes the website fascinating to explore. ➢ visually presentable and enjoyable to explore. ➢ appealing in terms of design and appearance that suits my style

IV. PSYCHOMETRIC VALIDITY OF WEB CONSUMER EXPERIENCE (WCX) AND DIGITAL CONSUMER EXPERIENCE (DCX) WITHIN E-COMMERCE BUYING DECISION FRAME

This section identifies and validates the significant operational measures of web consumer experience (WCX) of online buying decision. A similar process for developing and testing each construct was adopted. The first step was a literature review to determine how other researchers had operationalised the related constructs. Where possible, the pre-existing instrument was considered, developed, and adapted from existing scales within the online consumer experience (WCX) and buying decision behaviour literature, as shown in Table 1. These multi-item measures for each construct have been undertaken to the issues surrounding the web and digital consumer experience, in the context of e-commerce buying decision frame to generate and purify the scale items and data analysis procedure. Section 4.1 provides the pre-testing of the WCX and DCX measures. Section 4.2 discusses the Item Reduction and Scale Dimensionality.

4.1. Pre-testing of the measures

Following the guideline of Churchill (1979), item was generated from existing online consumer experience literature from various discipline. At the first stage, a pool of eighteen items of WCX items was created consisting of 6 items web experience of usability, 6 items of web experience of interactivity and 6 items of web experience of aesthetics and 6 items for DCX as shown in Table 2 below. The same procedure for specify the domain WCX construct is used to specify the DCX construct Following Hollebeek et al. (2014) and Brakus et al. (2009), 24 items were assessed for their content validity with seven academic experts and eight panel of online consumers. At the stage of item screening, it is important to have items judged for their suitability (Hardesty and Bearden, 2004), thus establishing an initial pool of items which possesses content validity (Churchill, 1979). The final measurement items (after the pre-test) are shown in Table 2. The items were measured using five-point Likert scales anchored by (1) strongly disagree to (5) strongly agree.

Table 2: Elements and Measurements of Web Consumer Experience and Digital Consumer Experience within the E-commerce Buying Decision (revised)

Element	Measure	
Web Consumer Experience (WCX) must include…		
Usability	USA1	easy to access at any time I want.
	USA2	navigational aids that are intuitively logical, easy to understand with minimal effort and time.
	USA3	classification that is easy to follow with minimal effort and time
	USA4	convenient to search, access and transact e-commerce activities with minimal effort and time.
	USA5	variety of search options about the product (i.e., filtering based on price, color and specification) with minimal effort and time
	USA6	user friendly as the consumer spent with minimal effort and time
Interactivity	INT1	good keyword search facility that allows me to interact with the product
	INT2	different interactive way to view the product (i.e., text, audio, moving image, graphic, sound)

	INT3	interactive platform (i.e., text, audio, moving image, graphic, sound) that helps me to compare products and prices
	INT4	interactive customization of the site's content that meet my personal needs and specification
	INT5	interactive informational link about the product
	INT6	multimedia technology such as audio and video that excite much interest towards the product and interact with the content of the product
Aesthetic	AES1	fresh and original design that makes me wanting to explore the website
	AES2	visually attractive appearance that creates much pleasure for me when exploring the website.
	AES3	innovative and creative that makes the website fun to explore.
	AES4	visually classy that is intriguing to explore professional that makes the website fascinating to explore.
	AES5	visually presentable and enjoyable to explore.
	AES6	appealing in terms of design and appearance that suits my style

Element		Measure
Digital Consumer Experience (DCX) must include...		
Digital Consumer Experience	DCX1	easy to access at any time I want.
	DCX2	navigational aids that are intuitively logical, easy to understand with minimal effort and time.
	DCX3	classification that is easy to follow with minimal effort and time
	DCX4	convenient to search, access and transact e-commerce activities with minimal effort and time.
	DCX5	variety of search options about the product (i.e.,,filtering based on price, color and specification) with minimal effort and time
	DCX6	user friendly as the consumer spent with minimal effort and time

4.2 Stage 2: Item Reduction and Scale Dimensionality

A series of exploratory and confirmatory factor analysis was performed in this study to operationalise the online consumer experience (WCX) and its three dimension together with digital consumer experience (DCX) construct. Factor analysis was undertaken to determine the factor structure for each dimension of WCX construct together with DCX construct (Hair et 17 al., 2006). In other words, factor analysis helps in identifying the smallest number of hypothetical constructs that can parsimoniously explain the covariation observed among a set of observed variables (Watkins, 2018). Stage 2 also help in assessing the dimensionality and psychometric properties of the WCX and DCX scales in particular, the three dimensions of WCX construct.

4.3. Pilot test of the measures

The next stage is to pilot test the measures using participants whose background was similar to the target population of the final study. The primary aim of this test was to explore the underlining theoretical structure and to ensure that the various measures demonstrated the appropriate levels of reliability and validity. Fifty subjects working in one of the faculties at a university were selected using convenience sampling to evaluate the measures of employee social protection. Forty-five completed and usable responses were used to test the psychometric validity of the measure. Exploratory factor analysis (EFA) was performed to identify the structure of the relationship between the variable and the respondent. This study used an EFA with principal axis factoring extraction and varimax rotation to extract factors predicting employee social protection within the CSR frame. In addition, a reliability test was evaluated by assessing the Cronbach alpha using the guideline of Nunnally (1978) of 0.70 and above.

V. RESULTS

5.1 Exploratory Factor Analysis – Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) Construct

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.56, and Bartlett's test of sphericity was significant ($p < .0001$), indicating appropriate relationships among items to conduct a meaningful EFA. The communalities for all items were range 0.40 – 0.70 (Costello and Osborne, 2005). All eighteen items have factor loadings of between 0.533 and 0.897. Based on eigenvalues greater than one, three components were successfully extracted with Component 1 representing usability (6 items), Component 2 representing interactivity (6 items), and Component 3 representing aesthetic (6 items).

Table 3: presents the factor loadings from the EFA of each factor

Construct	Item No.	Items	Loadings
Usability	Usa1	easy to access.	0.865
	Usa2	easy to understand	0.857
	Usa3	easy to follow	0.847
	Usa4	convenient to search, access and transact	0.881
	Usa5	variety of search options	0.845
	Usa6	is user friendly	0.817
Interactivity	Int1	easy to interact	0.825
	Int2	many different interactive ways to view the product (i.e., text, audio, moving image, graphic, sound).	0.839
	Int3	provide interactive platform	0.867
	Int4	provide an interactive customization	0.783
	Int5	provide interactive informational link	0.838
	Int6	provide multimedia technology content of the product.	0.794
Aesthetic	Aes1	has fresh and original design that makes	0.828

		me wanting to explore the website	
	Aes2	has visually attractive appearance that creates much pleasure for me when exploring the website	0.841
	Aes3	fun to explore	0.843
	Aes4	suits consumer style	0.754
	Aes5	visually presentable and enjoyable to explore.	0.814
	Aes6	very appealing and suits my style	0.726
Digital Consumer Experience (DCX)	De1	Application easy to search, access and interact.	0.857
	De2	Application content have adequate interactivity platform to search, access and transact e-commerce activities even through mobile technologies.	0.920
	De3	Application content is relevant and consistent	0.916
	De4	Application content is very appealing in term of design	0.894
	De5	Application design attractive and presentable is fun, enjoyable and fascinating to browse and explore even through mobile technologies.	0.849
	De6	Application provides an interactive customization of the site's content that meet my personal needs and specification and respond to my request very quickly	0.884

i) Correlation matrix

Factoring is helpful when there are large correlations between variables, i.e., around the range of 0.70, which will suggest there is enough shared variance that warrants examination (Nunnally and Bernstein, 1994). On the other hand, Tabachnick, Fidell, and Ullman (2007) suggest that correlation must be 0.30 or above which will suggest a strong relationship between variables. Further, the determinant score of 9.97 indicated an absence of multicollinearity as it was above 0.00001 (Yong and Pearce, 2013).

ii) KMO and Bartlett's Test

KMO measures correlations between variables and is a measure of the common variance between the items (Beavers et al., 2013). The KMO value ranges from 0 to 1 where a value of 0.50 is suitable for factor analysis (Williams, Onsman, and Brown, 2010; Yong and Pearce, 2013); however, a value of > 0.90 is considered suitable (Kaiser, 1974). In this study the results revealed a KMO value of 0.56 which is considered suitable for factor analysis (Beavers et al., 2013; Kaiser, 1974). The KMO value means that there is a distinct and reliable factor which can be extracted from the data (Yong and Pearce, 2013).

iii) Communalities

Communality refers to the proportion of variance in the measured variable accounted for by the common factors (Fabrigar et al., 1999). Communalities are deemed high if they are 0.80 or greater (Velicer and Jackson, 1990); however, communalities in the range of 0.40 to 0.70 are acceptable (Costello and Osborne, 2005). All of the initial and/or extraction communalities were in the acceptable range of more than 0.40. Thus, suggesting a linear relationship among variables. All of the items had a communality within the range of 0.40 to 0.70 and no item was dropped in future analysis (Costello and Osborne, 2005).

iv) Dimensionality assessment: Eigen values

Eigenvalue, thus, helps in determining the dimensionality of the scale and simplifying the factor structure. The results of EFA reveal that the variance of the first factor was 32.77 percent of the variance of all the variables. The first three factor represented 61.28 percent of the variance of all the variables and have an eigenvalues more than 1. According to Kaiser's criterion, all factors that are above the eigenvalue of 1 should be retained. This suggested the presence of a three-factor structure (Kaiser, 1960) as shown in Table 4.

Table 4: Eigenvalue of the Construct

Total Variance Explained							Rotated Component Matrix			
Component	Initial Eigenvalues			Rotation Sums of Squared Loadings				Component		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %		1	2	3
1	8.691	48.285	48.285	8.691	48.285	48.285	1	1.000	-0.144	0.001
2	6.332	35.180	83.465	6.332	35.180	83.465	2	-0.144	1.000	-0.066
3	2.976	16.535	100.000	2.976	16.535	100.000	3	0.001	-0.066	1.000

v) Pattern Matrix

As oblique rotation was used, the factor pattern matrix was employed to identify the factor solution (Yong and Pearce, 2013). Most studies report the results of the pattern matrix when oblique rotation is used (Hair et al., 2006). Pattern matrix presents values that indicates the relationships between the factor and the item when other factors' variance is removed (Beavers et al., 2013).

Pattern matrix provided the isolated items with high loadings on a specific factor (Williams et al., 2010). Hence, the pattern matrix facilitated in identifying the factor solution with items loading highly on specific factors. The decision to retain or reject any item was also made based on the result of the pattern matrix.

An examination of the pattern matrix reveals that a large number of variables had factor loadings greater than 0.50 indicating an adequate number of strong loaders (Costello and Osborne, 2005). Hair et al. (2006) consider items with loading greater than 0.50 is important for practical significance. The pattern matrix produces a simple structure solution with a single high loading for each item on only one factor (Hair et al., 2006); thus no item were removed based on the result. Consequently, the EFA rendered a 3 factor of WCX construct. Table 5 present an overview of the results of the pattern matrix. Furthermore, the factor plot revealed the items clustered together in separate rotated factor spaces, indicating that clustered items are correlated and represent single factor as shown in Table 5 the propose WCX items loaded onto three factors.

Table 5: Pattern Matrix- 18-Item WCX Construct

Pattern Matrix			
	Factor		
	1	2	3
Usa1	0.000	1.000	0.000
Usa2	0.000	0.000	1.000
Usa3	1.000	0.000	0.000
Usa4	0.000	1.000	0.000
Usa5	1.000	0.000	0.000
Usa6	0.000	1.000	0.000
Int1	1.000	0.000	0.000
Int2	0.000	1.000	0.000
Int3	1.000	0.000	0.000
Int4	0.000	1.000	0.000
Int5	1.000	0.000	0.000
Int6	0.000	1.000	0.000
Aes1	1.000	0.000	0.000
Aes2	0.000	0.000	1.000
Aes3	1.000	0.000	0.000
Aes4	0.000	1.000	0.000
Aes5	0.000	0.000	1.000
Aes6	1.000	0.000	0.000

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalizatio
a. Rotation converged in 3 iterations.

Exploratory Factorial Analysis (EFA) findings have been summarised in Table 5. EFA suggests a three-factor, 18-items of WCX construct. Overall, all the factor loadings were statistically significant with factor loadings greater than 0.70 in each of the factor.

The findings of EFAs revealed a three-factor structure of WCX construct. All items loaded on their respective factors with suitable factor loadings. None of the item were deleted. Overall, all of the items, indicated some of the 18 items to be improved, some of the items was rephrase and rewords with the supervisor and send for the academic experts, friends and postgraduate students to meet the requirement of the three factors of WCX construct. Thus, factor 3 which is aesthetic web experience is acceptable because of the result from the pre-test shows that the variables is important and still maintain in WCX dimension.

Next, the reliability statistic of the items is assessed to find the internal consistency of all the dimensions of the WCX construct.

5.2 Reliability analysis of WCX and DCX construct

Establishing reliability is an important part of ensuring construct validity (Cronbach, 1951, p. 265; Iacobucci and Duhachek, 2003). Reliability refers to "the degree to which measures are free from error and therefore yield consistent results" (Peter, 1979, p. 6). Reliability sets the limits for construct validity (Peterson, 1994). The most widely used reliability index is Cronbach's coefficient alpha (i.e., α; Cronbach, 1951) which is a generalised measure of the internal consistency of a multi-item scale (Peterson, 1994). Calculating coefficient alpha is an important step for purifying measures and assessing the quality of the instrument (Churchill, 1979). Coefficient alpha should be the first indicator of the quality of the instrument (Churchill, 1979). However, Nunnally and Bernstein (1994, p. 265) argue that "a reliability of 0.90 is the minimum that should be tolerated, and a reliability of 0.95 should be considered the desirable standard". Thus, a higher coefficient alpha indicates a better measuring instrument (Sekaran and Bougie, 2016). The results of the reliability analysis indicate that each of the three of the WCX factors had adequate coefficient alphas. Table 6 presents an overview of Cronbach's alpha value of all WCX factors and the DCX construct. Cronbach's alpha statistics were all closer to 0.80 indicating high internal consistency reliability (Sekaran and Bougie, 2016).

Table 6: Cronbach's alphas- Preliminary WCX Scale (n=100)

<table>
<tr><th>WCX Dimension</th><th>Number of Items</th><th>Cronbach's Alpha</th><th>Cronbach's Alpha If Item Deleted</th></tr>
<tr><td rowspan="6">Usability</td><td rowspan="6">Usa1
Usa2
Usa3
Usa4
Usa5
Usa6</td><td rowspan="6">0.660</td><td>0.891</td></tr>
<tr><td>0.903</td></tr>
<tr><td>0.898</td></tr>
<tr><td>0.891</td></tr>
<tr><td>0.898</td></tr>
<tr><td>0.891</td></tr>
<tr><td rowspan="6">Interactivity</td><td rowspan="6">Int1
Int2
Int3
Int4
Int5
Int6</td><td rowspan="6">0.742</td><td>0.898</td></tr>
<tr><td>0.891</td></tr>
<tr><td>0.898</td></tr>
<tr><td>0.891</td></tr>
<tr><td>0.898</td></tr>
<tr><td>0.898</td></tr>
<tr><td rowspan="3">Aesthetics</td><td rowspan="3">Aes1
Aes2
Aes3
Aes4
Aes5</td><td rowspan="3">0.742</td><td>0.757</td></tr>
<tr><td>0.628</td></tr>
<tr><td>0.757</td></tr>
</table>

	Aes6		0.628
			0.628
			0.757

5.3 Reliability, discriminant validity, and convergent validity

All the items were examined for reliability, and discriminant and convergent validity. The reliability of the psychometric properties of the measures were assessed in terms of individual item reliability by examining the simple correlations of the measures with their respective construct using the SPSS program. Hulland (1999) and Bagozzi, Yi, and Phillips (1991) suggest that an adequate and acceptable level for individual item reliability is that it should be greater than 0.50. As seen in Table 4, the reliabilities for all three factors were higher than 0.70. Hence, the parameter estimations of all three factors are accurate and achieve adequate internal consistency and reliability (Chin, 1998).

The convergent validity of the measurement items was assessed using three criteria: (1) the item factor loadings should be significant and exceed 0.50; (2) the composite reliability for each construct should be greater than 0.70; and (3) the average variance extracted (AVE) for each construct should exceed the variance attributable to the measurement error (i.e., AVE ≥ 0.50) (Fornell & Larcker, 1981). The AVE values (see Table 4) indicate that all the constructs exceeded the recommended threshold value of 0.50 (Fornell & Larcker, 1981). Thus, the AVE values exhibit adequate convergent validity for all three factors.

Discriminant validity was assessed by comparing the average variance extracted (AVEs) with the square of the correlation between the construct and each of the other constructs. The AVEs for each construct were greater than the square of the correlation for all three factors. As indicated in Table 4, all the shaded numbers on the leading diagonals are the square roots of the AVEs while the off-diagonal elements are the correlations among the three constructs. The highest correlation between any pair of the constructs in the lower left of the off-diagonal element of the matrix was 0.767 (i.e., 0.656 and 0.767), while the lowest square root of AVE was 0.690 (i.e., 0.690 and 0.784). This assessment indicates satisfactory discriminant validity (Fornell & Larcker, 1981).

The results of the final measurement model confirmed three essential factors of employee social protection within the CSR frame. Table 4 shows that the three factors (social services, social insurance, and social assistance) have acceptable reliabilities, and convergent and discriminant validities.

Table 4: Reliability, CR, AVE, SQRT AVE, and Correlations

Component	α	CR	AVE	USA	INT	AES	DCX
Usability (USA)	.847	.86	.76	.784			
Interactivity (INT)	.94	.93	.68	.729	.790		
Aesthetic (AES)	.91	.91	.79	.493	.626	.690	
Digital Consumer Experience (DCX)	.92	.92	.74	0.611	0.681	0.609	0.887

α=reliability, Cronbach's alpha; CR=composite reliability; AVE=average variance extracted; Perpendicular bold readings=square root of AVE; other readings=correlations between components

VI. DISCUSSION

The findings of this study reveal three factors that confirm the satisfactory reliability, discriminant validity, and convergent validity of the constructs.

6.1. Dimensions of Web Consumer Experience (WCX) and Digital Consumer Experience (DCX) within the E-commerce Buying Decision frame.

The previous literature failed to demonstrate the link between digital consumer experience (DCX) and online buying decision behavior and did not empirically test the dimensions of digital consumer experience (DCX) within the e-commerce decision buying behavior. Through the development of a measurement model, this study attempts to address the shortcomings of previous research on CSR initiative from the perspective of social protection-related issues in association with the social responsibility of employers to their employees. Based on the theoretical domains of social protection and CSR through employee expectations, this study identifies three essential dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision behaviour: usability, interactivity, and aesthetic.

The online consumers in our exploratory study expect e-commerce business to convey these three dimensions in the online business environment for the web and digital consumer experience of online consumers. A direct implication from the findings is that companies should analyse whether their web consumer experience (WCX) and digital consumer experience (DCX) activities contain these essential three dimensions to meet employee's expectations, and become more proactive. Although these dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision frame are different, they have overlapping objectives and impacts in the sense that they can be about promoting new dynamic capabilities of online business according to the complexity of online consumer behavior (Palalic, R., Ramadani, V., Mariam Gilani, S., Gerguri- Rashiti,S & Dana, L (2021). In this context, web consumer experience (WCX) and digital consumer experience (DCX) aim to support online consumers in co-creating their own desirable experience through a set of experiential values (Forlani, Buratti, and Pencarelli 2018; Jaziri 2019).

The findings indicate that usability and aesthetic is the main expectation of the online consumers, where its measures are aimed at online consumers who are working and have limited time to do traditional shopping. To the e-commerce business, this form of online business is equivalent to the experience of stable and reasonable business for online consumers to purchase online when they are in critical situations or emergencies. Thus, not only the usable of the website but also the aesthetic of the e-commerce website could also help e-commerce business to tapped their market based on the online consumers preferences and buying pattern in future. These web consumer experience (WCX) and digital consumer experience (DCX) initiatives in the form of usability assist in smoothing consumption during a crisis that forms a safety net. They can, therefore, help improve the well-being of the online consumers through strengthening the economic resilience of the digital economy communities. More specifically, web consumer experience (WCX) and digital usability can contribute to increase the benefits to the working adult.

Meanwhile, digital consumer experience (DCX) measures concern the risks associated with the event of security breaches. One of the potential risk for security breaches such as hacking and data breaches. Privacy concerns, consumers may concerned about their data being used and shared and companies need to ensure they have robust privacy policies and practices in place. Digital consumer experience can be considered to be a promotive measure of multiple devices (ex: smartphone & tablet) that is designed to enhance poor user experience, lack of trust, technical issues, lack of personalization and cybersecurity compliance.

6.2. Theoretical and practical implications

This study provides significant theoretical and practical implications for the information system and marketing literature. The findings of this study suggest theoretically and methodologically useful dimensions of web and digital consumer experience within the e commerce buying decision behavior frame. Although more work is required to validate the three dimensions and the measurement items, the findings of this study offer several useful applications to theoretical framework development and testing, thereby facilitating further empirical work in this understudied area. First, information system research, which has remained as the missing link between e-commerce buying decision process activities and consumer behaviour responses, will be improved by testing the role of web consumer experience (WCX) and digital consumer experience (DCX) initiatives by companies in the process of promoting equity and equality via e-commerce buying decision behavior.

Previously, researchers have concentrated on consumer experience (CE) activities that are external to companies. With the proposed measurements and constructs, the role of consumer experience initiatives in the process of web consumer experience (WCX) and digital consumer experience (DCX) can be investigated through testing the impact of the three dimensions on online buying decision behaviour responses. In addition, scholars should investigate the relative effectiveness of the dimensions on the potential and existing online buying decision beahvior. Which factor would generate the biggest impact on the success of buying decision behavior? By examining the positive relationships between web consumer experience and digital consumer experience within the e-commerce buying decision behavior frame dimensions and e-commerce buying decision behavior outcomes (equality and equity), the role of web consumer experience and digital consumer experience could be demonstrated, thereby filling a missing link in the information system and consumer behavior literature. Thus, this study will offer a clearer theoretical and practical direction for the role of web consumer experience and digital consumer experience in the process of contributing to equality and equity of buying decision behavior.

Moreover, the proposed web consumer experience (WCX) & digital consumer experience (DCX) within the e-commerce buying decision frame dimensions and measurements will facilitate further theory testing in terms of expressing the nexus between the extension of web consumer experience (WCX) and digital consumer experience (DCX). For practitioners, ultimately, an understanding and awareness of the three dimensions of web consumer experience (WCX) and digital consumer experience (DCX) within the e-commerce buying decision frame will enable true visibility and the sustainability of e-commerce buying decision process by companies.

VII. CONCLUSION

This study examines online consumer's expectations of online buying experience of using the website and digital buying experience within the e-commerce buying decision behaviour frame as an exploratory effort to develop a valid measurement instrument. Furthermore, this study is the first scholarly effort to illustrate the complete multidimensional theoretical nature of online buying experience by aligning the literature related to both information system and consumer behaviour. Although more work is needed to validate the measurement, the findings provide a valuable theoretical and methodological basis that helps demonstrate the contribution of companies' e-commerce initiatives to their potential and existing buyers and sellers.

Our contribution to the body of knowledge is in three aspects: (i) linking web consumer experience (WCX) and digital consumer experience (DCX) to the information system and marketing literature, (ii) applying the online consumer experience (OCX) concept into existing dilemmas in the information system and consumer behaviour literature, and (iii) providing opportunities and insights for future research. Thus, the concept and measurement of web consumer experience (WCX) and digital consumer experience (DCX) is our main contribution. Online buying decision behaviour in this paper focuses on the web consumer experience and digital consumer experience of the online consumers and online business. The four main components are usability, interactivity, aesthetic and digital consumer experience, which are measured based on the information search and evaluation buying decision process in relation to online business activities. We have proposed 24 items to appropriately measure the contribution of companies in improving e-commerce buying decision behaviour. In future, it is recommended to conduct empirical research by adopting the proposed instrument in order to assess the roles and impact of e-commerce on buying decision behaviour.

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An Overview on Russia Electricity Market

Grasu Stelian

ABSTRACT

In this article, the author tries to make an overview of Russia electricity market from market from its appearance until today. The electricity market legislation and the authorities which assure market regulation are identified and presented.

Transport and distribution system is overview and their connection.

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I. INTRODUCTION

Russia energetic reserves are among the greatest in the world. This makes Russia one of the leading exporters of energetic resources, manly hydrocarbons resources.

The beginnings of Russian energy industry can be found in Tsarist period when it was under control of differently ministries like finance, trade and industry or even internal affairs.

In spite of this, the development of the energy industry was very slow, government having big delays in electrification of the country. This led to considerable delay, because electrification was not considered a priority in the process of industrialization (Coopersmith, Jonathan, 1992).

In Soviet period, electrification of the country was a priority, the "State Commission for Electrification of Russia" was established in order to oversee the process on five-year program basis.

After Soviet Union dissolution, the energy system was organized under state owned company named Unified Energy System of Russia which was owned 50% by the state.

In 2002 the Russian government decide to upgrade its energy industry and begin to reform the system by separating production, transmission and commercialization of energy.

II. RUSSIA ENERGETIC STRATEGY

In 2009 was adopted with declared scope of protecting the internal resources and the interest of Russian companies and citizens the "Energy Strategy of Russia".

Law main aim is:

- ☐ to implement coordinated strategies in order to assure the growth of the energy industry
- ☐ to promote the foundation of Russian incorporated companies in order to promote the state energy policy in international markets and to assure the development of the internal markets on competitive premises.
- ☐ to ensure predictability of the sector regulation and create premises for investments.

Law also establishes the major guidelines regarding energy strategy like:

- ☐ ensure security for energy supply
- ☐ establish an energy efficient system
- ☐ ensure environment protection

For obtaining the goals stated in Energy Strategy for Russia, government focus on:

- ☐ establish encouraging climate for combustibles and energy sector, ensuring tax, subsidies, custom and antimonopoly promoting regulations
- ☐ adopting new technical standards and implement energy efficiency requirements
- ☐ promote strategic investment in sector, especially for innovation and energy saving
- ☐ rise control in order to increase management performance of the state companies involve in energy industry

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The Energy Strategy settle three main guiding axes which should be followed and implemented:

- ☐ determination for achieving the goals establish by country's energy strategy
- ☐ coordination between development of the energy sector with entire development of the country in order to avoid appearance of discrepancies
- ☐ effective measures in order to reduce the qualitative differences between inside and outside country evolution of the industry

As can see from above principles of development of energy sector, we observe that Russian energy market development will still have a major pilar the state sector.

III. ASSESSMENTS

3.1 Electricity market framework legislation

Bogdanov in "The Energy Regulation and Markets Review 2020-Russia", made a compressive presentation of the law which organize Russian energy market and how they are organized.

According its constitution, Russia is a federal state where the power is exercised by federal government solely or together with local authorities.

Main laws on energy sector are adopted at federal level, which establish also the guidelines axes of sector development. The local authorities implement federal legislation and harmonies it with at local conditions.

Energy market regulations are divided in general regulation and specific regulations like electricity, gas and oil and renewables.

General regulation draws the general principles of whole energy market. The most important laws which regulate the sector are:

- ☐ Law no.147-1995 regarding natural monopoly
- ☐ Law no. 57-2008 regarding strategic companies and the governing regulations for foreign investment in strategic sectors
- ☐ Law no. 190 -2010 regarding heat supply

Organization and activity of electricity sector is established mainly by following laws:

- ☐ Law no. 170-1995 – which regulate the production and the use of nuclear energy
- ☐ Law no. 35- 2005 – which regulate the electricity sector
- ☐ Decree 1172-2010 – which define and organize the wholesale energy market and capacity market
- ☐ Government Resolution no. 442 -2012 -which provides main regulation on the retail market which is selling electricity to final consumers (industrial and housekeepers)
- ☐ Government Resolution no. 861-2004- which provides the procedure for obtaining access to transmission facilities and services
- ☐ Government Resolution no.1178-2011- which regulates price and tariffs for electric power

(Josefson et al,2023- Electrical regulation in Russian Federation – view on https://uk.practicallaw.thomsonreuters.com)

3.2 Electric sector regulatory authorities

Further to Russian Law the main regulatory authority in Russian electric sector is The Ministry of Energy.

Its main scope is to enforce the state policy and law in electric sector and provide the need regulation.

Price control is assured by The Federal Antimonopoly Service which is responsible for transmission tariffs and residential tariffs. In case of monopoly practices of the players on electric sector, this service could interfere and apply fines for breaking the rules.

Implementation, monitorization of environment objectives and demands and safety and health matters is ensured by ROSTEKHNADZOR- The Federal Service for Ecological, Technological and Nuclear Supervision.

3.3 RUSSIA electricity transport and system operators. Distribution system

As per Federal LAW 147/1995 art.4 there are considered natural monopoly buying governed and owned by state the following activities in electricity sector:

- ✔ services on the transfer of electric power;
- ✔ services on the operative-dispatch management in the electric-power industry;
- ✔ services in the transfer of thermal energy;

According Federal Law 35/2003 amended 2021 -On electric power sector -The Unified National (All-Russian) Electric Grid includes country the electric network as well as the producing facilities who assure electricity delivery to the industry and final consumers. Russia electric system is designed to operate also in parallel with other countries electric systems.

Russia electric system is supervised by a joint stock company - Russian Open Joint Stock Company of Energy and Electrification "Unified Energy System of Russia"- where according Federal Law No. 35-FZ of 05.04.2013, the Russian state cannot have less than 52 % participation. According underway reform the state participation will decrease to 50% plus a voting share. This organization approves the contract for transmission of electric energy and commissioning and decommissioning to country's grid.

The electric grid facilities and (or) parts thereof is used by territorial grid organizations to provide services for the transmission of electrical energy to consumers whose power receiving devices are technologically connected to such facilities and (or) their parts.

The fulfillment of the obligations of territorial grid organizations for the provision of services for the transmission of electrical energy to consumers, the power receiving devices of which are technologically connected to the electric network and (or) their parts leased, may be ensured by the organization for the management -Unified Energy System of Russia-(clause 11 introduced by Federal Law No. 308-FZ of 06.11.2013)

According article 9 of Federal Law 35/2003- amended 2021- the organization Unified Energy System of Russia assure also the transmission of the electric energy.

For implementation and development of unified national electric grid, the organization creates schemes and programs for a long-term period.

The system operator is also an open joint stock -company but according Russian new law the state ownership should increase up to 100%.

The system operator and its affiliates, groups of persons are prohibited from engaging in activities for production, purchase and sale of electrical energy, with the exception of the purchase and sale of electrical energy (capacity) carried out for the purpose of technological support. (Federal Law No. 250-FZ of 04.11.2007)

As per Federal Law 35-2003 amended 2021 -On electric power industry, the main tasks of system operator are:

- ensure the quality parameters of energy delivery and the network system
- manage of technological modes of operation of electric power facilities
- forecast the volume of production and consumption in the electric power industry and create the reserve of energy production capacities
- develop and submit to the authorized federal executive body together with the organization for the management technological schemes and programs and participate at their implementation.
- accept commissioning and decommissioning of electric and thermal energy plants
- issue the rules for operational dispatch control of the electric power industry
- develop optimal daily schedules for the operation for electric production plants and electric network
- regulate the electric frequency of electric flows and ensure emergency functioning
- organize the parallel operation of Russian electric grid with other countries, including sale and purchase of electric energy

- establish the technological parameters for connection /disconnection to national grid
- control the technical condition of electric power facilities and power receiving devices of electric energy consumers that affect the reliability and safety of the Unified Energy System of Russia;
- organize the selection of service providers to ensure system reliability

3.4 Today electricity sector

The Russian electricity and capacity market today is a complex structure that consists of both typical market elements and public regulation mechanisms. The main problem with the existing system is low competition, owing to, on the one hand, the need for the smooth and reliable operation of the electric power sector and, on the other, the relatively small number of electricity and capacity sellers on the wholesale market.

New incentives are currently being sought for more competition on the market, particularly, by increasing the sales of electricity (capacity) produced using renewable energy sources.

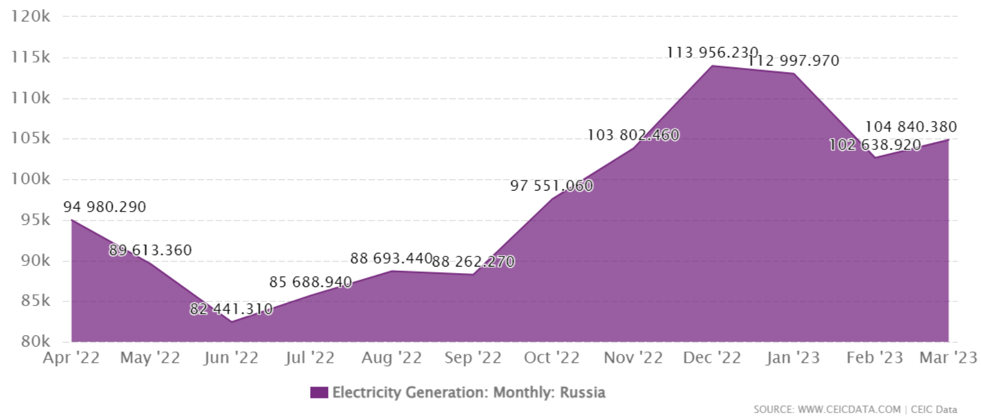
According CEIC Data available on (www.ceicdata.com) shown on bellow graphic, electricity production in Russia on period April 2022 – march 2023 (war period) decrease from 94,980.290 GWh on April 2022 to 82,441.310 GWh on June 2022.

After this year minimum the electricity production reach to the maximum of 113,956.23 GWh on December 2022 and reach to 104,840.38 on March 2023.

Comparing electricity production march 2022 with march 2023 we observe an increase of 2 % from 102,639 GWh to 104,840 GWh.

The production of December 2022 (113,956 GWh) represents the maximum production till now. The negative record was reach on June 2000, when were produced 57,600 GWh

Russia's Electricity Production from Jan 2000 to Mar 2023 in the chart (www.ceicdata.com) :



3.5. SWOT Analysis on Russia electricity industry

Strengths	Opportunities
1. Russian electricity grid: Developed mainly in Soviet era. Russian electricity grid cover almost entire territory bringing electricity to the industrial users and housekeepers.	*1. Renewable Energy Development:* Due its natural resources for renewable energy like solar, eolian and geothermal, Russian Federation have a very important opportunity to develop these sectors in order to contra balance the electricity produced by hydrocarbons.

2. Geographical Strategic Position: Being positioned between Asia and Europe Russia can export electricity easily for both markets, being linked to almost all-important markets. *3. Hydro- electric power plants:* Hydro resources are spread throughout the territory of the Russian Federation, which creates the premises for their use in hydropower plants, a large part of them being built during the Soviet period. Russia is one of the most developed countries in the world in the hydropower system. *4. Nuclear Energy:* The Former Soviet Union (now inherited by Russian Federation) was one of the pioneers of using nuclear energy for generation electricity.	*2. Energy Efficiency Improvements:* Lately Russian Federation make important steps in order to increase energy efficiency by reducing the energy loses and also by modernization of the internal grids mainly constructed decades ago. *3. Export Market Expansion:* Due to globalization of the world economy and the increased necessity of electricity, Russia have an important opportunity to increase its exports to its neighbors which are less endowed with electricity generation plants. The global trends for reducing the emission of CO_2 also provide a big opportunity for Russian renewables energy industry to increase export abroad. *4. Technological Innovation:* Russia's high technological capacity represent a serious advantage for the development of the electricity market by creating smart power grids as well as finding more efficient solutions for electricity transmission and storage.
Weaknesses *1. Dependence on Conventional Energy Sources:* The electricity market in Russia being mainly developed on XX TH century is significantly orientated on traditional energy forms like coal and natural gas. This development exposes it to the risks associated with international fuel prices and environmental internal and international regulations. volatile fuel costs and the tightening of environmental laws. *2. Inefficient Energy Use:* Having in view that a major part of Russia electricity generation and transmission system in	Threats *1. Global Shift Towards Renewables:* International commitment for reducing CO_2 and GHG emissions represent an important threat to Russian electricity exports which are produced by traditional sources. *2. Regulatory and Policy Uncertainties:* The actual changes in international policies and requirements regarding energy production, new

constructed in Soviet era there still a lot of problems caused by lack of efficiency in use which conduct to energy waste. *3. Limited Investment in Renewables:* Being very endowed with traditional resources for electricity production like coal, oil and natural gases, Russia steps to promote the renewables sources was behind other countries which can generate a disadvantage in future. . *4. Regional Disparities in Electricity Access:* Even the national grid is spread across entire country, there are discrepancies of tits operation and functionality between urban, industrial and rural sites.	taxes imposed on carbon emissions and general lack of predictably is also an important threat on Russian electricity generation and export industry. *3. Economic Sanctions:* Russian present international policies and action lead to an international isolation of the country mainly in its relationship with western countries, which is affecting its electricity industry in the terms of the access of latest technologies and modernization investments. *4. Climate Change Impacts:* The present climatic changes are affecting Russia electricity industry mainly due to lack of predictability, the decrease or extreme precipitation which affect its important hydro-electric generation industry.

IV. CONCLUSIONS

Further to its strategy for development of electric energy industry, Russian government was proposed to develop:

- Gas turbines with a capacity of 300-350 MW and on this premises to achieve highly efficiency
- Develop electric energy generation based on environmentally friendly technologies using consecrated fuels like coal, solid fuel
- Develop electricity generation based on synthetic fuels use
- Construction of smart grids connection integrated in Russia Unified Energy system

These ambitious goals which involve important investment and access to the newest technologies must face the current pollical situation due to Ukraine invasion, which bar the access to scientific information and reduce substantial the investment due to redirection of about 40% of nation income to war industry.

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Factors Affecting Employee Motivation and Performance – A Case of Zambia National Housing Authority (Znha)

Dr. Chaste Nsama (PhD) & Mr. Thomas Thomas

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ABSTRACT

Motivated workers tend to show extra commitment towards their jobs which translate to higher job performance and consequently improved organizational performance. Financial or monetary rewards such as salary, fringe benefits, bonuses, commission, etc., are not the only way to get employees motivated. There are other ways employees can be motivated with zero financial cost attached. Human resource is the most critical resource for any organization in today's highly competitive business environment. If we know what drives the people then we are able to make them to do what we want (Kocel, 2010). This study wanted to understand the factors that affect employee motivation at National Housing Authority (NHA) in Zambia, and what strategies management at NHA have put in place to enhance employee motivation and performance. The study employed a mixed method research design and a questionnaire was used to collect the required data. The data collected was coded, quantified and analyzed quantitatively and qualitatively. Quantitative data was analyzed by the use of statistical package for social sciences (SPSS).

Keywords: employee motivation, performance, research institutions, national housing authority, lusaka zambia.

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The key and major findings of the study were that; Job security, salary, effective performance appraisal, recognition and career advancement were major motivation factors for employees at NHA. These results imply that non-financial factors are key in the motivation of employees and signifies the importance of management to take deliberate steps to put in place these non-financial factors.

The study recommended that NHA should exploit extrinsic factors such as Job security, effective performance appraisal in their human resource management practices particularly in the strategic human resource management to ensure that the employees have a sense of security with their jobs and are well motivated to perform their tasks.

Keywords: employee motivation, performance, research institutions, national housing authority, lusaka zambia.

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I. BACKGROUND OF THE STUDY

So many questions can be asked when it comes to understanding what employees want from their jobs whether it's a higher salary, job security, good relationships with co-workers, opportunities for growth and advancement – or something else altogether? All these are important questions which influence employee motivation. The extent to which an organization can accomplish its objectives largely depends on how employees are motivated. This is because employees are considered the lifeblood of any organization. Every organization regardless its size, reputation, net-worth and line of operation, needs motivated workers to put in their very best towards the success of the organization. As per the pilot study conducted by the researcher in October and November 2020, the results of the pilot study NHA has continued to experience work stoppages and labour turn over. Furthermore, the pilot study revealed the research showed that 85% of employees were not happy with delays in salaries and that there has been labour turnover and work stoppages

1.1 Problem Statement

National Housing Authority has in the past five years experienced work stoppages, boycotts, labour strikes, inconsistency in paying workers' salaries and workers dismissals. The pilot study conducted by the researcher in November 2020 showed a reduction in the number of employees from 108 as at January 2018 to 75 as at November 2020. All these occurrences have potential to affect employee's motivation and overall performance of the organisation. This is because having motivated employees is critical in achieving the organisations objectives.

As per the pilot study conducted by the researcher in October and November 2020, the results of the pilot study showed that 42% of the above projects and objectives were achieved as of December 2019 (MoLGH, NHA 2020). Even after receiving funding and injection of capital, NHA has continued to experience work stoppages and labour turn over. Furthermore, the pilot study conducted at NHA in November 2020 revealed by the research showed that 85% of employees were not happy with delays in salaries and that there has been labour turnover and work stoppages. It is against this background that it would be imperative to investigate and understand the factors that affect employee motivation at NHA and its effect on the performance of the organisation.

1.2 General Objective

The general objective of the study was to determine the factors influencing employee motivation and how they impact employee performance at National Housing Authority.

Specific Objectives

1. To establish the factors that affect employee motivation at NHA.
2. To examine how organizational culture influences employee performance at NHA.
3. To assess the effect of motivation on employee's performance at NHA.

II. LITERATURE REVIEW

2.1 Employee Motivation and Performance

Motivation is the most important factor that influences organizational performance in different institutions. It is important to note that employee motivation is one of the policies that managers use to increase effective job management amongst employees in organizations (Shadare et al., 2013). A motivated employee is responsive of the definite goals and objectives individuals must achieve. Organizational facilities will go to waste if it lacks motivated people to utilize these facilities efficiently. Employee motivation and performance are key factors in moving a business forward. Owners, managers, and supervisors know positive motivation leads to better performance and higher productivity but may rely on the wrong tools that will create dissatisfaction among employees and leads to poor performance. Motivation increases the willingness of workers to work, thus increasing effectiveness of the organization. Organization goal is to develop motivated employees and support their morale regarding their respective works for better performance (Shadare et al., 2013).

2.2 Factors of Motivation

According to Adewunmi, Omotuyole and John (2011), Employees satisfaction and motivation are major determining factors that assist in channeling the employee efforts towards the attainment of organizational goal. Similarly, Tella et al. (2007) consider motivation as a factor which affects the individual's performance. However, there are other important factors also which should be considered for example individual's ability and competency, funds and working situations. In addition to this, Chen et al. (2010)

2.3 Effect of Motivation on Employees' Performance

Extrinsic motivation factors like praise acts as a motivator because it enhances employees' needs for esteem, self-actualization, growth and achievement. It is most powerful, less expensive, and simplest, yet the most underused motivational technique. To motivate people to high levels of performance, objectives should be difficult but achievable, observable and measurable, specific, with a target date, anticipatively set when possible and accepted by employees. Employee who meet their objectives should be rewarded through recognition, praise, pay increase and promotions.

The study conducted by Mweemba (2019) which focused on the performance of banking sector in Zambia revealed that variables such as training, salary increment, and medical scheme have high levels of motivation on employees in the Zambian banking sector. Furthermore, a research carried by Masaiti and Naluyele (2011) on the "employee's perception on incentives and motivation" on employees at the ministry of education (MOE) in Zambia reviewed that majority of employees were not satisfied with the salary given to them and this had an effect on their levels of motivation and performance. In another research conducted by Mungo'mba (2018) on the effect of Motivation on Workers Performance and productivity at Zambia breweries, the research revealed that majority of employees were not satisfied with their work and that salaries affected their motivational levels. The low motivation levels had a negative impact on the efficiency and effectiveness of the workers which ultimately affected productivity.

2.4 Maslow's Need Hierarchy Theory

Maslow (1954, p.24) outlined in his theory that humans rarely reaches a state of complete satisfaction and he is therefore always wanting. This means that, when one desire is met or satisfied, another desire will emerge and once this new desire is satisfied, still another will come up. Maslow stated that this is part of the characteristic of human beings.

2.5 Herzberg's two-factor model

Herzberg's two-factor model theory sometimes called the motivation–hygiene theory states that the factors giving rise to job satisfaction are distinct from the factors that lead to job dissatisfaction (Armstrong, 2007, p.124). Therefore, there are two groups of factors affecting job satisfaction according to (Armstrong, 2007, p.124) and these are "Satisfiers or motivators which are intrinsic to the job. These include achievement, recognition, the work itself, responsibility and growth. The second group comprises what Herzberg calls the 'dissatisfaction avoidance' or 'hygiene' factors, which are extrinsic to the job and include pay, company policy and administration, personal relations, status and security. These cannot create satisfaction but, unless preventive action is taken, they can cause dissatisfaction

III. METHODOLOGY

3.1 Research Design

Mixed method research design was used as it was considered the appropriate approach because by using quantitative or qualitative method as stand-alone approach, it was inadequate to best understand the research problem and triangulation of research methods provided the best understanding.

3.2 Target Population

The target population was 75 employees broken down into 35 permanent and pensionable employees and 40 contractual employees.

3.3 Sampling Techniques

The census approach was used due to the relatively manageable number of employees at NHA of 75 and doing a sample would have reduced the population to a minimal number..

3.4 Data Collection Instruments

Data was collected using a structured interview schedule and a questionnaire specifically designed for this study.

3.5 Data Analysis

Data analysis involved organizing the raw data in order to make sense out of it. Raw data on its own may not bring out the lessons and outcomes unless it is organized. This study used both qualitative and quantitative data. The quantitative data collected was first checked, cleaned and finally coded. After the quantitative data was coded properly, it was entered into a software for analysis called Statistical Package for Social Sciences (SPSS) version 21.0.

IV. DISCUSSION OF FINDINGS

4.1 Factors affecting employee motivation at NHA

The study found that there are various factors both financial and non-financial factors affecting employee motivation at NHA with non-financial factors ranking high. Under non-financial factors, majority of employees (74%) said they were motivated by job security, 68% were motivated by favourable work environment, 58% were motivated by good health benefits while 55% said they were motivated by a good and competitive salary. Job security was defined to employees in the questionnaire as a state where the employer does not terminate employment without following clearly documented procedures.

According to the press release by the Jesuit Centre for Theological Reflection (JCTR) for December 2020, an employee with a good salary will be able to feed and take good care of his family and afford other basic needs (JCTR 2020). the national wide survey undertaken by the Consumer Unity and Trust Society (CUTS, 2019) showed that 83% of Zambians said that the price of the staple food mealie-meal is too high with 42% saying that they can no longer afford to buy the nation's staple food which is consumed by more than 60% Zambians. The Civil Society for Poverty Reduction (CSPR, 2020) reports that 43%, of the total labour force in Zambia is unemployed while majority are in the informal sector earning below the Basic Needs Basket. This means that, few people are in employment to have a constant monthly income to feed their families.

4.2 Work stoppages and boycotts

Work stoppages, boycotts and labour strikes from employees can signal that the employee is not happy with the conditions of service offered. Employee's levels of motivation have a direct relationship with what effort they put into their jobs. One of the managers interviewed agreed that there were instances when employees had gone on labour strike due to non-payment of salaries on time. The manager further said that the major reasons for paying salaries late were many which could not be discussed in detail with the researcher.

4.3 Organizational culture and its influence on employee motivation and performance

From the respondents interviewed, 91% said culture has an influence on their motivation levels and performance. This was noticed by a moderately positive relationship between organizational culture and employee performance whereby an improvement in organizational culture increases on the performance of employees. The study found that the staff at National Housing Authority (NHA) respect each other, honesty was valued at National Housing Authority (NHA) and that staff values were in line with the values of the institution.

4.4 Effect of motivation on employee performance

The respondents were asked if motivation had any effect on their performance. The following were the views from the respondents. 89% of the respondents interviewed agreed while 11% of the respondents interviewed said no.

V. CONCLUSION AND RECOMMENDETIONS

5.1 Conclusions

The research established that majority of employees (74%) were motivated by job security followed by 'favourable work environment' (68%) while 55% said that they were motivated by a good and competitive salary. This is because the company has experienced labour unrests, work stoppages which have resulted in some employees been dismissed while others put on forced leave. Therefore, job security is critical to

5.2 Recommendations

- Introduction of a deliberate policy where middle managers and supervisors undergo supervisory trainings at least once in a year. This will enhance the relationship between employees and management and build transparency especially when it comes to performance reviews and appraisals.

- Transitioning all employees to be on contracts. This will help solve the allegations that employees that are on permanent and pensionable are treated differently from those on contracts when reviewing their performance and renewing employees' contracts.

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ABSTRACT

The main goal of this study was to assess the effect of social media marketing activities in customer's response and customer satisfaction in digital world. This study employed a systematic review methodology, with 42 from 2017 to2023 existing articles completed on SMMA and customers intention and satisfaction based on an inclusion/exclusion criterion. The method used to collect data was a systematic strategy, and the obtained data were analyzed by utilizing content analysis. Collected were from Emerald, Goggle Scholar, Research Gate, Wiley on-line library, Tyler and Francis. The findings of this study were collected using a thematic method, which involved extracting previous researchers' findings from the literature, classifying similar themes and findings, and drawing conclusions. According to the findings of this review, SMMA Commercialization, entertainment, and promotions have the highest effect on trust and loyalty. Social SMMA influence brand loyalty and brand awareness. SMMA helps sellers inspire consumers with social, reward, and empowerment incentives, which can influence customer behavioural outcomes such as acquisition intention, loyalty intention, and participation intention. Review recommends that businesses should capitalize on social media's impact on customer purchasing decisions by encouraging engagement, improving product quality, offering fair prices, and focusing on social media content. Analytics tools can track user behaviour, and providing feedback is crucial for establishing SM credible customer relationship Management Avenue. Socialization motivation, exclusive deals, and timely responses can boost customer confidence and online purchases. Future researchers should undertake test experimental designs to measure social media marketing's impact on customer response and satisfaction, explore consumer perceptions of information overload, analyze longitudinal studies, examine moderator roles, and improve SMM efforts.

Keyword: social media, customer's response, customer satisfaction.

I. INTRODUCTION

In today's world, people are more tending to transfer their interactions social media platforms (such as Facebook, Instagram, LinkedIn, and Twitter) as social media programmes grow into one part of their everyday lives. In line for to this, reflect favourably on their attitudes and actions towards all forms of social media technology(Kusumo et al., 2021; Madiha Raees et al., 2023). Marketing practitioners across the world have understood the significant prospective of advancing time in the digital space considering a variety of social media platform(Obilo, 2021; Tajvidi et al., 2021). Modern technology offers numerous options for companies worldwide, requiring marketing and management to understand their positives and negatives, apply them to marketing strategies, and boost operations, sales effectiveness, and revenue growth(Nikoli, 2021). As (Ali et al., 2016) discussed, how social media technology is rapidly adopted, new methods of product marketing are emerging. The internet and social media have now assumed the role of being the foundation for any company's expansion, and this technology has revolutionised how businesses undertake their business activities.

Consumers have started shifting from traditional buying to digital buying. However, unfortunately, a popular trend among marketers is to emphasise traditional marketing platforms. In the past, businesses relied on traditional media, which is a one-way form of communication, but with recent social media awareness and a sole concentration on conventional media, their business would suffer in the long run (Al-Zyoud, 2018; Nawi et al., 2021; Salhab et al., 2023).

As social media continues to rise and developed part of customers' daily activities, business entities have integrated their marketing activities into social media marketing. This relatively new form of communication demonstrates new challenges and opportunities for brands(Es-Safi & Sağlam, 2021). Activities for social media marketing have four area of dimension such as entertaining, trendiness, interaction, and word of mouth have used to promote their online channel, improve brand awareness, and engage more customers(Bekar, 2016; A. J. Kim & Ko, 2010; Kim et al., 2021). WOM in social media is seen as one of the result' elements rather than a reason' component because customer who often visit travel firms' social media tend to hunt for meaningful information, not only for fun (Sano, 2014). Marketing on social media platforms based on the customer's purchase intention, in-store, and through exchange of various devices As communication channels expand, companies must maintain adequate customer service in a digital world, making research essential to meet this demand. Customers increasingly purchase online, in-store, and through various devices. As communication channels expand, companies must maintain adequate customer service in a digital world, making research essential to meet this demand (Salhab et al., 2023).

Past studies suggested that Social media marketing activities (SMMA) acts as initiator for customers to purchase, get more information about the product (Nawi et al., 2021); influence in brand equity, brand awareness as well as brand locality among consumers(Malarvizhi et al., 2022). (Pasaribu & Silalahi, 2020) have suggested that Social media marketing's impact on brand loyalty, awareness, and intermediary variables, revealing significant influence on brand loyalty and awareness among consumers. SMMA is influence on purchase intention and brand awareness by informative, interactive, and attraction of potential customers(Cleo & SOpiah, 2021).

This study will offers a valuable and original contribution to SMMA and customer Response and satisfaction in the digital world by summarising and reviewing the existing literature and discussing future research avenues. It can potentially answer new theoretical and managerial questions about SMMA and customer response and satisfaction by benefiting researchers. In recent year, several reviews was undertaken (Bryła et al., 2022) SMM with customer engagement sustainability; (Bilro et al., 2023) customer behaviour in B2B aspects. (Grover et al., 2022) Conducted on evolution and investigate social media influences at individual level with reverence to diverse contexts such as organization, marketplace, and social media; (Siriwardana, 2021) SMM with respect to consumer product ; (Khan & Jan, 2015) comparing social media with social media marketing and (Wen, 2020) reviewed social media marketing with respect to marketing strategies. Limited researches was conducted SMMA in customer's response and customer satisfaction. Thus, this study is to address this gap, we present a systematic analysis of the literature published article. This review identifies crucial themes and characteristics and proposes research questions and directions for social media marketing researchers interested in SMMA and customers response and customer satisfaction.

This systematic review answer the following question

1. How do SMMA in customer's response and customer satisfaction operationalized in research models (independent or dependent variable, control, or moderator)?
2. What are the impact of SMM in customer satisfaction and purchase intention in collected research?

3. What are the relationship between SMMA and customer response in brand awareness, brand locality and purchase intention?

II. MATERIAL AND METHODS

Systematic reviews collects all possible studies related to a given topic, design, and review their result(Kang, 2015). A systematic literature review is suggestion that the previous literature accurately and reliably analysed the quality of peer-reviewed journals by preferred reporting items and consisting of a meta-analytical structure (PRISMA) (Liberati et al., 2009). PRISMA provides a four-stage flow diagram demonstrating the sample identification for screening and then for eligibility testing and the final demonstration of the studies included in the study. The flow of PRISMA diagram and text should describe clearly the process of report selection throughout the review. PRISMA should report distinctive information identified in searches, records excluded after preliminary screening or screening of titles and abstracts excluded in the reports retrieved for detailed evaluation, potentially eligible reports that were not, saved reports that do not meet the requirement for inclusion criteria and the primary reasons for exclusion, and the studies included in the review. PRISMA lies in its generality and possible to provide more consistency across its reviews(Bryła et al., 2022; Liberati et al., 2009). This review followed four steps which include, establishing the inclusion–exclusion criteria for study selection, identifying relevant quality studies, evaluating the literature, and finally reporting the findings.

2.1 Identification and Selection of Studies

This section of the review thoroughly, giving full explanation and justification for the searching and managing steps listed earlier. In particular, justification must be stated for the source of the findings or searching strategy, search terms and limits used, inclusion or exclusion criteria, how studies were screened (e.g. abstract screening, and many people data extraction, how dissimilarity of inclusion was decided between reviewers and method of quality assessment. Full explanation/justification of methods of statistical analysis should be provided (Piper, 2013). For this review, identification and selection of published articles based on relative key words, assessing the relevance of articles related to SMMA and customer satisfaction will include. The diagram below show the

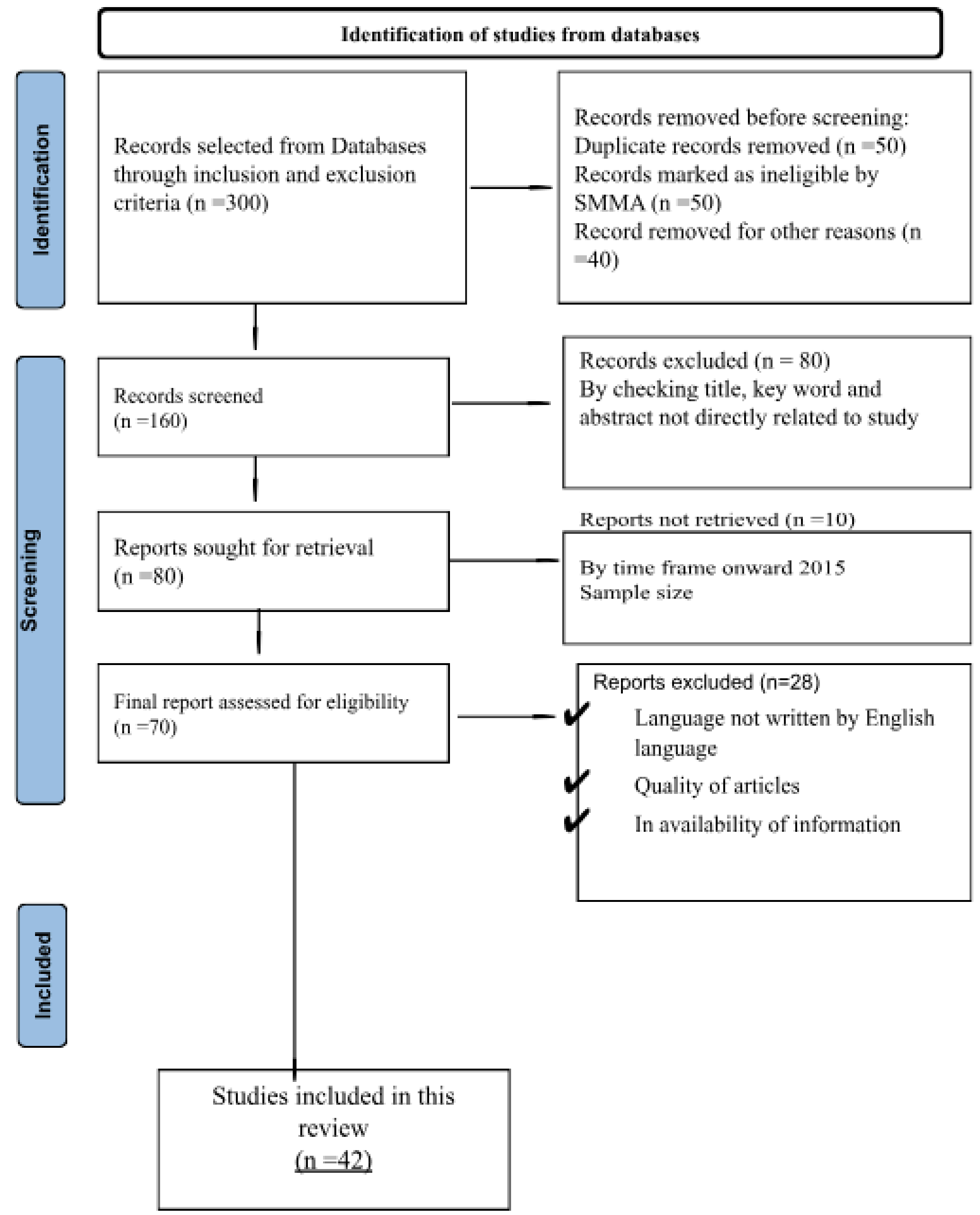

Figure 1: PRISMA–SCR flow diagram indicating summary of selected article adopted from (Bryła et al., 2022)

III. CONCEPTUAL AND THEORETICAL BACKGROUND

3.1 Social media marketing activities

Social media marketing is defined as the utilization of social media technologies, channels, and software to create, communicate, deliver, and exchange offerings that have value for an organization's stakeholders (Solomon, 2018). SMMA is advised as sophisticated digital marketing dealing that integrate social media networks and all parties' physical phenomenon into useful strategic ways of attaining targeted marketing productivity (Li et al., 2021). (Kim et al., 2021) identifies SMMA entertainment, customization, trendiness, interactivity, and word-of-mouth as predictors of SMMAs, examining their impact on brand loyalty, equity, and willingness to pay premium prices. Social media was developed during the 1970s, and the internet has been around in some form since the 1940s. The first social networking website did not launch until 1997. Around the time Face-book enlarged its network in 2006, marketers switched to social media Communication between people has changed because of technology. The impact of now interact with influencers, learn saying, and become influencers ourselves thanks to social media (Edosomwan et al., 2011).

Social al media can be described as an on-line application program, platform, or mass media tool that is able to facilitate communication, collaboration, or sharing information among users in general and direct sales, customer gain, and customer retraining for a business (Bilgin, 2018). Social media marketing enables consumers to interact and engage positively with a company and brand, promoting activity marketing and engaging content to increase reach and interest(Putri Dwicahyani, Henny Welsa, 2022). SM is on-line platform for communication, collaboration, and sharing information among users, facilitating direct sales, customer gain, and retention for businesses. Social media marketing is a strategy used by successful businesses to connect with on-line consumers. It consists of five dimensions: entertainment, interaction, trendiness, customization, and word of mouth (WOM). Affective, cognitive, and evaluative processes in a customer's mind influence brand image(Godey, 2016; Karman, 2017; Lee, 2019). Social media plays a crucial role in marketing strategy, enabling enterprises to establish direct communication and strong customer relationships. SMMA significantly influences customer relationship quality, leading to positive behavioural outcomes. To attain the marketing goal and generate sustainable performance, SNS marketing content should follow these dimensions (Wibowo et al., 2021).

3.2 Social Media Marketing and Customer Satisfaction

Customer satisfaction has been one of the top tools for a successful business. Customer satisfaction means general valuation based on the total purchase and consumption experience with the good and service . Specific product or service features and perceptions of quality determinant customer satisfaction. Satisfaction is also affected by customer's affective responses, their classification perception of equity(Zeithaml, 2009). Consumer satisfaction is crucial because it allows businesses to collect consumer input in a way that allows them to manage and develop their operations. Consumer satisfaction is crucial because it allows businesses to collect consumer input in a way that allows them to manage and develop their operations. The best predictor of how the business will do in the future is customer satisfaction. Customer satisfaction aids in doing SWOT analyses, which could aid in the advance and systematic development of their firm(Ninib et al., 2020). Nowadays, social media has enough complexity to allow marketers to use the components of SMM in on-line communities, interaction, sharing content, accessibility, and creditability as one of the to the highest degree effective factors to recognise users opinions, comments, and information and its impact on customer satisfaction (Moh'd, 2017).

According to (Ding, 2022) SMM is well-advised as positively affect customer satisfaction and increase its social media activities in China as this can help it to attract new customers and improve its business performance. (Ninib et al., 2020) An analysis found that social media reaction time has a positive and significant impact on consumer satisfaction, and that businesses should put more effort into maintaining superior social media response times. In a similar, consistent social media posting greatly contributes to raising consumer satisfaction. Additionally, it assists clients in staying informed about the newest goods, services, brands, and deals, which ultimately increases customer. SMMA aids with social identification, which mediates the relationship between user intentions and social media use, and satisfaction, which mediates the association between social media use and (Ding, 2022). SMMA impacts customer satisfaction stronger than behaviour intention and positive word-of-mouth(Sano, 2014).

3.3 Customers Response Toward Social Media Marketing

Social media encourages better networking and social interaction among users, marketers increasingly use these channels to spread their message. However, because to the level of engagement in this medium, attention is frequently drawn to the primary goal alone, which affects how consumers react to the commercial. In this context, the study examines the function of media interaction and its effects on how consumers respond to social media(Malarvizhi et al., 2022; Sreejesh, 2022). SMMEs have effects on branding, customer response has riled the interest of researchers on customer response, and branding supported(Godey, 2016; Hameed et al., 2023; A. J. Kim & Ko, 2010; Mammadli, 2021).

According to (Hariguna & Berlilana, 2017) E-commerce on social media has reliability on the quality of system, quality of information and worth of service, it will significantly affect the number of calls to e-commerce which will certainly be a hedge against the quantity of purchases and SMMs creates customer trust, and making purchase transactions. Social media has revolutionized consumer communication, making it cost-effective and suitable for accessing information. These communications have positive outcomes for companies, such as increased book sales and on-line ranking of films. Marketing communications are crucial for brand equity and decision-making in viral marketing (Abzari et al., 2014; Elwalda & Lu, 2014).

IV. CONTENT ANALYSIS

The objective of this research paper is to investigate how SMMA influencing to the customer response and satisfaction in the digital realm. To achieve this aim, we reviewed 42 published articles on the subject of SMMA and their influence on customers dissatisfaction and outcome. Additionally, the study aims to provide insights into the various strategies and techniques employed by engagement with customers on SMMA and how these affect positive customer outcomes ultimately, the findings of this research will contribute to a better understanding of the role of social SMM in shaping customer perceptions and behaviours. This section discusses SMMA research approaches and analytical techniques used in surveys, content analysis, and latent profile analysis.

4.1 Country Included In Review Article

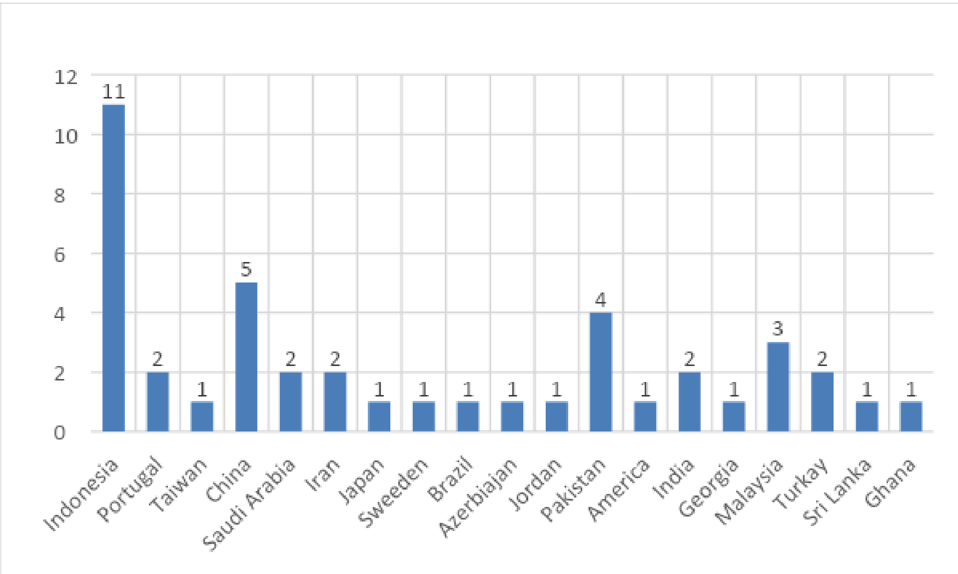

Figure 2: Country included in review article

The review article examined studies from different countries to gain a comprehensive understanding of the impact of social media marketing activities on customer satisfaction and response in the digital world. The studies were not limited to any specific region or continent, and instead, diverse ranges of countries were included in the review. This approach ensured that the research findings are reflective of a global perspective and are not limited to any particular cultural or geographical context. Among the country Indonesia articles.

4.2 Year of publication

Number of publication on effect of SMMA customer's response and customer satisfaction in digital world, which indicated, published after 2017 and 2023 in the graph. The graph below shows the number of publication in the mentioned year.

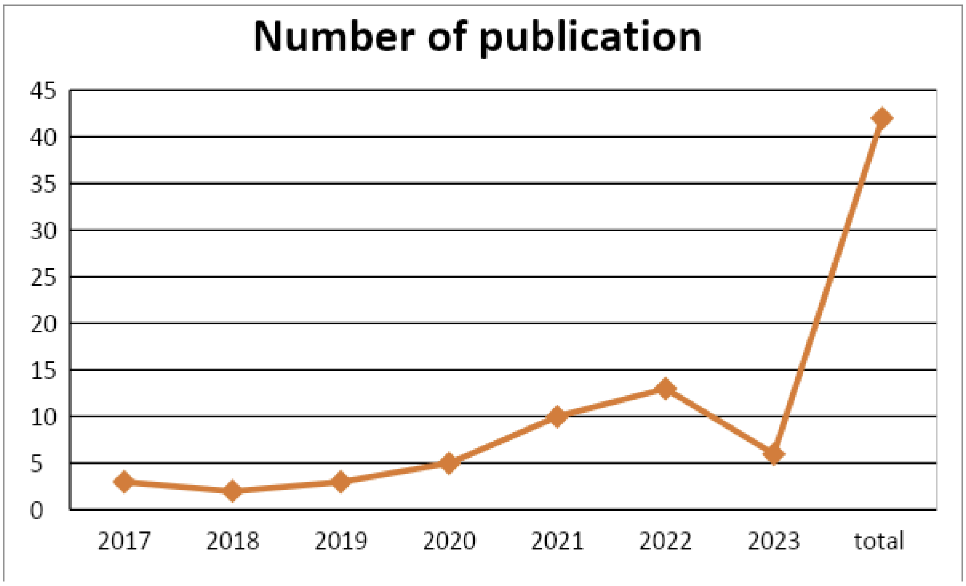

Figure 3: Number of reviewed articles published per selected year

4.3 Research Approach Used

The research approach includes mixed, quantitative, and qualitative methodologies. The figure below shows the research approach used in selected articles.

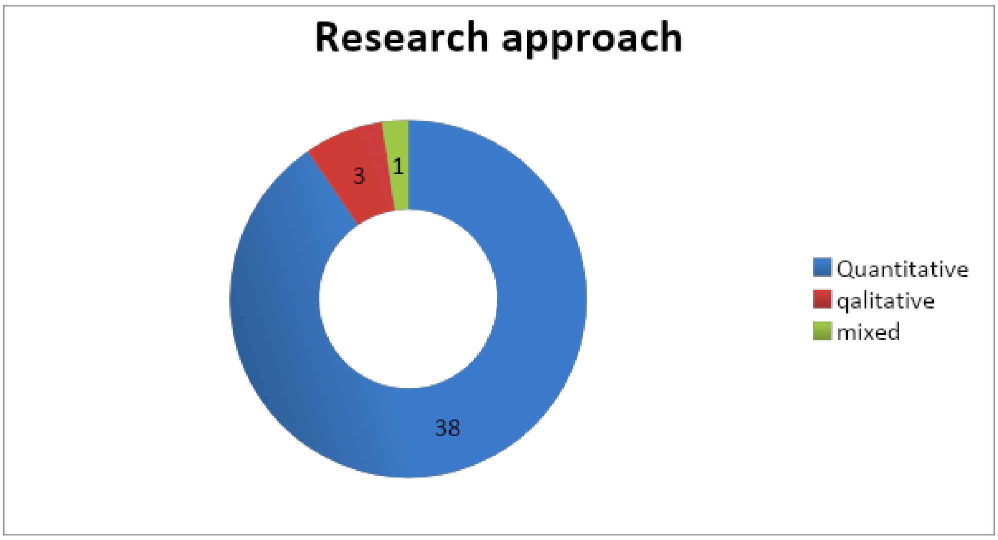

Figure 4: Methodologies used in selected studies

The above figure 4 shown that the majority (90.47%) of articles reviewed used a quantitative approach followed by (7.14%) used qualitative research approach and only (2.55%) of articles used a mixed research approach.

4.4 Data analysis method adopted in selected articles

Data analysis primarily steps for big data analytical methodologies, methodical construction, data mining, and analysis tools(Abdul-Jabbar & K. Farhan, 2022). The figure below shows data analysis method for collected articles

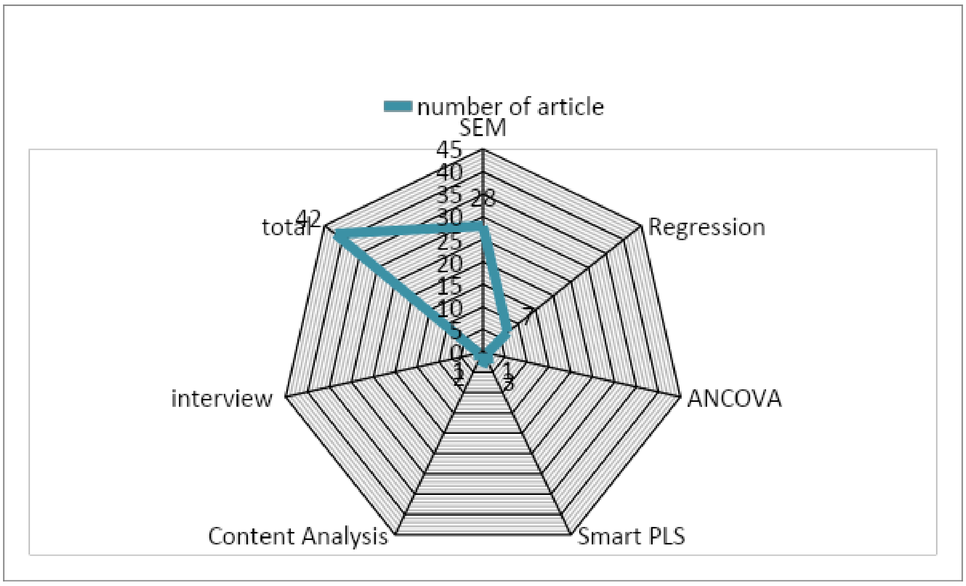

Figure 5: Data analysis method used in selected articles

The figure presented displays the distribution of data analysis methods utilized in a set of collected articles. The results shown that the majority of the articles (66.66%) employed the Structural Equation Modelling (SEM) technique, while (16.66%) utilized regression and correlation analyses. Additionally, (7%) of the articles, used Smart PLS and (2.38%) used content analysis as their primary method for data analysis.

V. RESULT AND DISCUSSION

This paper anticipated to understand SMMA and customer response and satisfaction course of action from collected articles.

According to (Tauran et al., 2022) SMMA has a positive and significant effect on brand image, SMM has a positive and inconsequential effect on purchasing decisions and brand image has a positive and significant impact on purchasing decisions and brand image mediates the influence of SMM on buying decisions. (Althuwaini, 2022; Ibrahim et al., 2021) examined that SMMA on brand executives on social media platforms (in this case, Facebook) should promote specific SMMA for their brands and engage in such activities to create brand trust and brand loyalty and Commercialization, entertaining, and promotions, were stated to have the highest effect on trust and loyalty. There is significant influence between social SMMA variables on the a brand loyalty and brand awareness (Pasaribu & Silalahi, 2020). SMMAs enable marketers to directly connected with consumers and lobby customers' feedback (Malarvizhi et al., 2022). Moderately significantly mediated the related with SMMAs and their consequences (Bushara et al., 2023). According to (Ding, 2022) social media marketing positively influencing customer satisfaction According to (BİLGİN, 2018); SMMA effective factors on brand image and brand loyalty, besides it has been determined that the most obvious effect seen on brand awareness also (Nawi et al.,

2021) examined that SMMA considered as key success factors in enhancing customer equity. SMMA helps sellers how to inspired the consumers with social, recompense and empowerment incentives to advance their intent to purchase on-line(Yu et al., 2022). SMMA helps to (Jamil et al., 2022; Wibowo, et al., 2021) SMMAS customer's relationship quality, which can impact customer behavioural outcomes, which are acquisition intention, loyalty intention, and participation intention (Kusumo et al., 2021)(Es-Safi & Sağlam, 2021). improved together brand awareness and increased sales (Mammadli, 2021). Brand trust and brand image have a essential consequence on purchase (Abu-alsondos et al., 2023; Fulya, 2017; Madiha Raees et al., 2023; Niu & Zhang, 2022; Salhab et al., 2023).

The word of (Faria et al., 2022) SMMA contribute in a positive way to supporters' satisfaction and engagement. (Chen & Lin, 2019). SMMA, Social empathy, and professed value straight affected the satisfaction, which then influences continued intention, contribution intention, and purchase intention. SMMA has positively and significantly impacted customer satisfaction and impacts customer satisfaction levels (Ninib et al., 2020). SMMA attract consumers' attention, shape attitude, and influence them to make a purchase (Hameed et al., 2023; Ravi et al., 2021).

SMMA has positive association between SMM and brand knowingness, brand choice and purchase decision (Parmar, 2019). Also in the word of (ALI et al., 2019) impact on consumer perception marketing and promotional marketing also has impact on consumer perception. (Faisal & Ekawanto, 2022)SMMA increase brand awareness and positive image of the brand.

VI. IMPLICATION

Each business company should recognize the effect of SM on customers' purchasing decisions and influence it to their advantage. They should encourage customers to involvement in exchanges about their goods and services, both in person and on social media platforms like Face-book, You Tube, and twitter to increase their customer satisfaction and purchased intention of their customer. This can be achieved by improving the quality of their products and services and offering them at fair prices to satisfy customers.

Businesses should focus on social media content to increase engagement and influence future purchase intent. Social media managers use analytic tools to track user behaviour and identify relevant information points. This message will encourage further participation and establish a reciprocal connection between brand and user. Providing feedback on various platforms is crucial for establishing SM as a credible customer's relationship management avenue. In the age of digital communication, it is preferable to concentrate on increasing brand awareness and utilising SSMA to improve the impact on purchasing intent. This suggests that businesses need to comprehend and shape consumers' attitudes towards their brands in order to boost purchase intentions. On social media, advertise their goods

In the era of digital communicating, it is preferable to concentrate on increasing brand awareness and utilising SSMA to improve the impact on purchasing ability of consumer. This suggests that businesses need to comprehend and shape consumers' attitudes towards their brands in order to boost purchase intentions. On social media, advertise their goods.

Customer satisfaction can be achieved through efficient service failure recovery and complaints determinations. Social media fosters positive relationships and positive perceptions, leading to increased usage of travel agencies. Word-of-mouth (WOM) is more influential than customer satisfaction, with satisfied customers more likely to use the same service. Positive WOM is not related to behaviour intention, but rather customer commitment, resulting in high satisfaction. Companies should prioritize gaining positive WOM to maintain customer satisfaction and loyalty therefore any business organization should apply SMMA to increase customer satisfaction. SMMA is helps to consumer motivations, including social, empowerment, and remuneration, to influence consumer commitment. Socialization motivation, a critical element of social media, is also analysed to understand the effect of socialization motivation on customer commitment. It offering exclusive deals, incentives, and rewards during festivals can boost customer confidence and on-line purchases. Maintaining close connections with customers, focusing on customer recommendations, and responding promptly to inquiries and complaints can build customer trust and increase on-line purchase intentions business should focus on SMMA to get the mentioned benefits.

VII. LIMITATION OF STUDY AND FUTURE RESEARCH DIRECTION

Future researchers should focus on experimental designs to test different levels of information and measure the impact on message SMMA with respect to customer response and satisfaction. Researchers can also use qualitative research methods to explore consumers' perceptions of information overload and identify strategies that can be used to moderate its effects.

The majority of collected articles are from developed nations, which indicates the absence of research in developing countries. Therefore, the researcher recommends that to know the digital marketing of developing countries, it is better to undertake research on SMMA and customer intention in developing countries.

Future researcher should undertake longitudinal studies should analyse inquiry values and reading experiences to determine case and effect relationships with variables. Different countries both developed and developing country to areas may have different preferences, requiring further research to address these limitations. Future researchers can examine whether different characteristics example personality, culture, technology effect to use SMMA or members' community participation.

The review identified that there is many limitations, including a cross-sectional sample of only one field and limited generalizability. Future studies should explore social media marketing's effects on various industries and cultures, employ different methods, and examine moderator roles like age and gender.

Marketers should improve their SMM efforts improve purchase intention and responsiveness to customer inquiries. The company should create a consultation feature for potential customers to inquire about cosmetics and beauty products. To enhance brand awareness, The Marketers should focus on promotion and market segment expansion, targeting both on-line and off-line media.

VIII. CONCLUSION

lationship between social media marketing (SMMA) and customer response and satisfaction. SMMA has a positive and significant effect on brand image, while social media marketing (SMM) has a positive and inconsequential effect on purchasing decisions. SMMA can be promoted on social media platforms like Facebook to create brand trust and loyalty. Commercialization, entertainment, and promotions have the highest effect on trust and loyalty. Social SMMA variables influence brand loyalty and brand awareness. SMMA helps sellers inspire consumers with social, reward, and empowerment incentives, which can influence customer behavioural outcomes such as acquisition intention, loyalty intention, and participation intention. SMMA positively impacts customer satisfaction and engagement, and its association with social empathy, professed value, continued intention, contribution intention, and purchase intention is significant. SMMA also influences consumer perception, with marketing and promotional activities influencing consumer perception. Overall, SMMA increases brand awareness and positive brand image, ultimately influencing customer satisfaction.

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An overview on China Electricity Market

Drd. Stelian GRASU

INTRODUCTION

Since the 1980s, China's economy has grown rapidly, with an annual growth rate exceeding 10%. This economic expansion has outpaced the development of energy production. While in the 1970s and 1980s, energy production growth was 150-200% higher than economic growth, in the last two decades, it has slowed to about 50% of the rate of economic growth.

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I. INTRODUCTION

Since the 1980s, China's economy has grown rapidly, with an annual growth rate exceeding 10%. This economic expansion has outpaced the development of energy production. While in the 1970s and 1980s, energy production growth was 150-200% higher than economic growth, in the last two decades, it has slowed to about 50% of the rate of economic growth.

China’s energy strategy focuses on the following strategic goals:

- ☐ Reliable energy production increases to support rapid economic development
- ☐ Impose energy efficiency in the production and consumption sectors
- ☐ Harmonize the economic growth with energy production and consumption, aiming in the same time reduction of CO_2 and GHG emissions

Until the early 1970s, coal energy production in China was exclusively carried out by state-owned companies. However, after this period, local communities and individual enterprises began to enter the sector. In recent years, these non-state entities have come to produce about one-third of China's coal energy.

In the early 1990s, China experienced a significant shortfall in energy production, which was insufficient to support its rapid economic growth and domestic consumption.

This shortfall in energy production was also driven by inefficient energy consumption, which became particularly evident in the 1980s. At that time, China's energy consumption relative to its GDP was four times higher than Japan's and three times higher than that of the USA.

The inefficiency in China's energy consumption was primarily due to its technological lag compared to developed countries. Additionally, the economy of the 1980s was characterized by low energy prices and a lack of incentives, which also contributed to this lack of efficiency.

Beginning in the 1980s, China prioritized energy efficiency by promoting significant investments in this area. The programs launched during this period to enhance energy efficiency were largely successful.

Today, China’s energy policy relies on both enhancing energy efficiency and improving production and delivery.

II. LITERATURE REVIEW

Ngan, H.W, 2010 in, “Electricity regulation and electricity market reforms in China“ thoroughly examines the regulatory structures that influence China's electricity market, highlighting the necessary policy changes required to harmonize the sector with global energy practices.

Wang, Q and Chen, X. in "Market-Oriented Reforms and China’s Green Economic Development", published in 2012, evaluate the slow progress of market-oriented reforms, identifying major issues that obstruct the complete realization of market liberalization.

In their 2014 publication, "Sustainability Issues Arise in Several Other Policy Areas," Wu, Y et al. recommend that the government revise its policy framework to better support the development of the electricity market. They argue that these adjustments should ensure the market promotes both economic growth and environmental sustainability.

In their 2016 publication "Electricity Market Stochastic Dynamic Model and Its Mean Stability

Analysis," Zhang, W et al., introduced a dynamic analysis model designed to forecast future trends in the electricity market. This model considers the impact of existing policies and technological advancements.

Fang, D et al., published in 2018 their "Sustainability Issues Arise in Several Other Policy Areas", where they analyze the impact of government regulations on renewable energy. They advocate for the implementation of more robust policies that can keep pace with rapid technological advancements and changing market demands.

In their 2019 publication, "Challenges and Strategies for Electricity Market Transition in China," Kahrl, F., and Lin, J. explore the challenges faced by the electricity market as it shifts toward a more equitable and risk-aware framework. They emphasize the importance of implementing tariffs that accurately reflect the actual costs of electricity generation and consumption.

Yin, J et al., in "Economic and Efficiency Analysis of China Electricity Market Reform Using Computable General Equilibrium Model", published in 2019, use a computable general equilibrium model to evaluate the economic impacts of market liberalization on China's electricity sector. They highlight how these reforms have successfully enhanced efficiency and reduced costs.

In their 2019 article titled "Putting China's Electricity Market Reforms on the Spot," Bao, M et al., review the reforms in China's electricity spot market. They discuss the challenges encountered and the progress achieved through these reforms.

III. ASSIGNMENTS

3.1 Legal framework

The Electric Power Law, adopted in 1995, aims to promote and guarantee the development of the electric energy sector, ensure the safe use of electricity, and protect investors' interests, as stated in its General Provisions. It introduces the principle "whoever invests will benefit from there". If the electricity produced is delivered to the national grid, the producers will have priority for its usage when needed. If the electricity is not delivered to the national grid, the producers will have complete authority over its usage. The State establishes what electric power generation project to be implemented and what equipment and technologies to be used.

Local governments should support the expansion of the sector by ensuring the availability of necessary land and, in some cases, relocating the affected population.

The law also refers to the electric networks, which should be operated in a manner that ensures a reliable energy supply. The State Council establishes, according to the law, the dispatch conditions. It also approves a draft contract that stipulates the obligations and rights of the electricity supplier and clients/end-users. The law also sets the price for electricity delivered to the national grid, as well as the price that the grid is entitled to receive from consumers. The pricing established by the law follows the principle of equal price for equal quality of electricity on the same electric network.

The Coal Law, adopted in 1996 and later amended in 2011, creates the legislative framework for the coal industry. However, the aforementioned law has defects concerning the regulatory system and the use of labor forces.

The Energy Conservation Law, adopted in 1997 and amended in 2007, establishes a legislative framework to stimulate energy efficiency policies. It sets up an incentive mechanism to promote energy conservation and also imposes sanctions for non-compliance.

The Water Law, adopted in 1988 and amended in 2002, establishes the legal framework for the utilization and protection of water resources to support the country's economic development. It covers both ground and underground water resources, which, according to the law, are state-owned. The law also sets out rules for their use in civil and economic activities.

The Renewable Energy Promotion Law, adopted in 2005 and amended in 2009, encourages the use of renewable energy to mitigate environmental problems such as CO2 and GHG emissions caused by fossil fuels. The law sets up control mechanisms to promote the sector, regulates access to the national network, and outlines the costs and tariffs associated with renewable energy. Additionally, it provides for the allocation of special funds to support the use of renewable energy.

The State Council Regulations on Supply and Utilization of Electricity, adopted in 1996 in accordance with the Electric Power Law, are designed to establish the rules for electricity production, supply, and usage, and aim to protect the interests of all parties involved. The regulations emphasize safe delivery and use of electricity, while also highlighting the importance of rational and economical utilization.

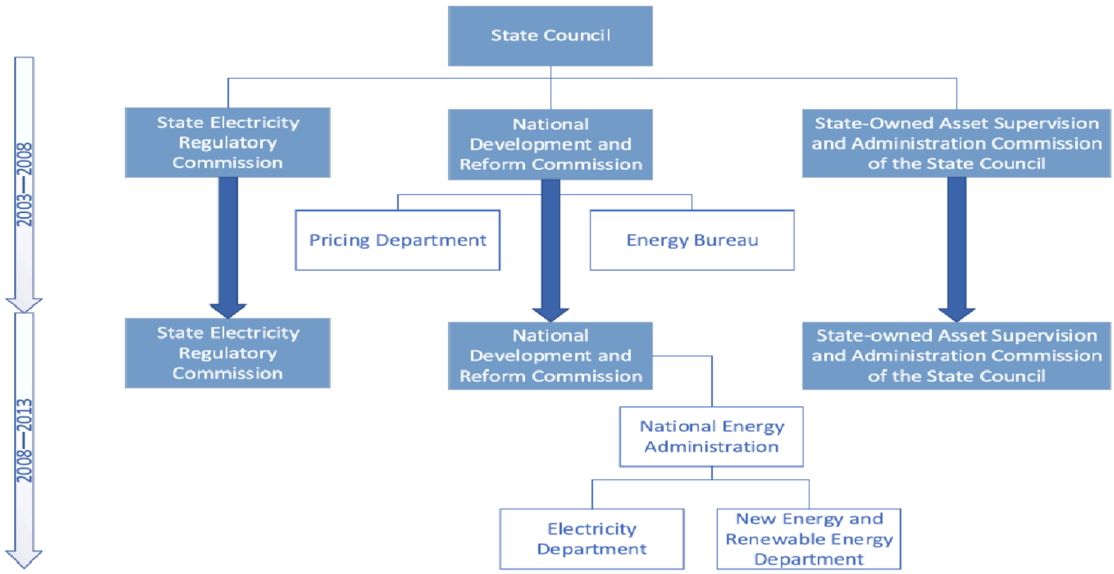
The Regulations on Power Grid Dispatch Administration, adopted in 1993 and modified in 2011, organize the activity of national power grids to ensure safe energy intake and delivery, as well as to protect investors' rights.

3.2 Regulatory Authorities

The first organization founded in China with the role of regulating and surveying the power industry was the State Electricity Regulatory Commission (SERC) in 2002. SERC began its activities in 2003, and its main duties were:

- ☐ Create the organization and operation rules for the electric sector.
- ☐ Provide recommendations for industry development to be incorporated into the development plan.
- ☐ Oversee and amend the organization of electricity market and sale-purchase contracts.
- ☐ Supervise the completion.
- ☐ Supervise and regulate the operation of production facilities, as well as transmission and distribution systems, for electric energy.
- ☐ Establish and impose the technical and safety standards in the sector, environmental protection.
- ☐ Calculate and submit for approval tariffs for ancillary services.
- ☐ Control and enforce law and regulation.
- ☐ Implement the policies and the programs pertaining to the sector decided by the State Council.

In a state-controlled economy, the commission's authority and tenure were, in fact, quite limited and short-lived, lasting approximately ten years. Beginning in 2013, the commission was merged into a state department called the National Energy Administration, whose goal is to regulate energy policy in China.



Source: XU J, CAO X- Regulatory institutional reform on the power sector in China (2022)

Figure 1. Reorganization of the ministries related to electricity administration.

The National Energy Administration is no longer an independent organization; it now operates as a state administration under the supervision of the National Development and Reform Commission (NDRC)."

Despite having national authority, the NEA reports directly to the head of the NDRC, rather than to the executive power, the State Council. Its relationship with the executive power is mediated through the head of the NDRC, who has full authority to determine which issues should be brought before the State Council and which ones must be decided by the NDRC.

Before being appointed as director of NEA, the nominated person must hold a ministerial rank, which allows the administration to have higher priority in communication with the State Council compared to other national administrations and authorities.

While the National Energy Administration is considered the regulatory authority of the electric sector, it lacks the independence and authority typically associated with regulatory bodies in Western countries. Instead, it is fully subordinate to the NDRC and the Chinese State.

3.3 China transport and distribution networks

According to the Regulation on the Administration of Power Grid Dispatching adopted in 1993 and amended in 2011, power grid dispatching is ensured by power grid dispatching agencies. These agencies are responsible for the operation, command, and coordination of the power grid to ensure safety, high quality, and economic efficiency.

The objective of power grid dispatching is to achieve unified dispatch and ensure the generation and utilization of electricity as outlined in the established plan. Deviations from the established plan are permitted only under special circumstances. A designated department within the State Council supervises power grid dispatching activities.

The electricity production and consumption are established on an administrative basis each year. The allocation is made on a fair principle so that generators using the same resources are given equal annual hours of production.

The State Council also establishes the operation of dispatching agencies, their jurisdiction, and hierarchy. The dispatching system is organized into a five-level hierarchy:

1. National Dispatch Organization
2. Regional Dispatch Organization
3. Provincial Dispatch Organization
4. Prefectural Dispatch Organization
5. County Dispatch Organization

Table 1: China Dispatching Organization

LEVEL	HOST	JURISDICTION	KEY FUNCTION
National (NDO)	State Grid Corporation of China	*Voltage level*: >500 kV *Geographic*: Regional interties *Generators*: Large thermal or hydropower shipping across regions	Interregional balancing, interregional dispatch
Regional (RDO)	Regional grid companies	*Voltage level*: 330–500 kV *Geographic*: Provincial interties *Generators*: Pumped hydro storage, regulation	Interprovincial balancing, interprovincial dispatch
Provincial (PDO)	Provincial grid companies	*Voltage level*: 220 kV (330–500 kV terminal substations) *Geographic*: Bulk provincial system *Generators*: Larger generators not controlled by RDO or NDO	Intra-provincial balancing, intra-provincial dispatch, coordinating load management
Prefecture (MDO)	Prefecture power supply organizations	*Voltage level*: </=220 kV *Geographic*: Local system *Generators*: Smaller local generators	Prefecture load management
County (CDO)	County power supply organizations	*Voltage level*: </=110 kV *Geographic*: County system *Generators*: Any remaining generators	County load management

Source: Kahrl, F., and Wang X in Integrating Renewables into Power Systems in China (2014)

The decisions of dispatching agencies are subordinate to the decisions of higher-level agencies, ultimately culminating in the national agency, which holds the highest authority.

The national dispatching system is divided into two companies

- State Grid Corporation of China (SGCC)
- China Southern Power Grid Company's Dispatch Center (covering Guangdong, Guangxi, Yunnan, Guizhou, and Hainan)

State Grid Corporation of China (SGCC) was incorporated in 2002 and is considered the world's biggest utility company. According to the data available on the company's site (www.sgcc.com, 2023), bellow table presents the company's leading indicators evolution between 2010 - 2020.

Table 2: SGCC indicators evolution 2010/2020

INDICATOR	2010	2020	EVOLUTION
Electrical line length (million km)	0.593	1.142	↑ x 1.9
Substation capacity (in trillion VA)	2.25	5.23	↑ x 2.3
Electricity consumption (in trillion kwh)	3.36	5.83	↑ x 1.7
Maximum load (in million kw)	529	875	↑ x 1.7
Installed capacity (million kw)	744	1700	↑ x 2.3

Source: Own research based on available data

The company is organized into 6 branches, 27 provincial companies and 37 subsidiaries, employing over 870,000 people. The company provides services for about 1.1 billion people and covers approximately 88% of China's territory.

The Company is ranked in third position on the Fortune Global 500 list of companies.

China Southern Power Grid Co., Ltd. (CSG), was established in 2002 and operates grid services across multiple regions, including Guangdong, Guangxi, Yunnan, Guizhou, Hainan, Hong Kong SAR, and Macao SAR.

Its services cover approximately 1 million square kilometers and serve around 230 million people. The service area spans 1 million square kilometers, with a population exceeding 272 million. The CSG electric network spans about 2,000 kilometers and has a total installed capacity of approximately 310 GW, with a transmission power of about 50 GW.

The company is organized into 3 branches, 13 wholly-owned subsidiaries and eight holding subsidiaries, encompassing nearly 280,000 employees in total.

Currently, the company is ranked 89th on the Fortune Global list of companies.

A particularity in CSG's development strategy is the orientation for export and interconnection with electrical grids of the nearby countries. Based on data from 2022, GSG exported 40,212 GWh to Vietnam, 1,228 GWh to Laos, and 4,969 GWh to Myanmar. Additionally, it purchased approximately 23,279 GWh from the same countries.

The companies mentioned above hold a state monopoly on purchasing electricity from producers and supplying it to consumers. Connections to the dispatching grids of power generators adhere to principles of equal access, mutual interest, and consensus.

3.4 Today market

Today, energy markets are globally used instruments to develop energy security, supply fair prices, and achieve the mutually agreed goal of reducing CO_2 and GHG emissions.

Being the world's largest energy consumer, China's need for energy resources has led it to become a net importer of oil and other fossil fuels. This is despite the fact that its state-owned companies, as previously noted in the top Fortune Global companies list, are among the largest producers of energy.

China is taking significant steps towards developing its energy market with the aim of achieving a carbon-neutral economy by 2060. Decentralization and empowering provinces to make decisions are among the tools being utilized. This is alongside the challenge of creating a unified national market system to ensure fair access to resources.

An energy revolution was declared to combat pollution and promote the use of electricity, as well as natural gas, based on new non-polluting technologies. Despite significant strides in developing energy from renewable sources, demand for coal remains extremely high. The logistical challenge arises from the placement of coal mines in the North and Northwest provinces, while the major consumers and power plants are located in the eastern and southern coastal provinces. Over the last decade, approximately 80% of energy transport has been represented by coal, with the remaining balance covered by electricity transmission.

According to data received from IEA, China Energy Mix Evolution 1990-2020 is presented in the table below:

Table 3: 1990-2020 China Energy Mix Evolution

Year	Coal		Natural gas		Hydro		Wind, solar, etc.		Biofuels and waste		Oil		Nuclear		TOTAL
	Production	%	Production	%	Production	%	Production	%	Production	%	Production	%	Production	%	
1990	22,211,650	60.74	536,080	1.47	456,192	1.25	1,388	0.004	8,392,235	22.95	4,973,396	13.60	0	0.00	36,570,941
1995	27,131,803	62.02	627,918	1.44	686,077	1.57	54,157	0.124	8,573,514	19.60	6,534,880	14.94	139,996	0.32	43,748,345
2000	27,970,456	58.92	869,018	1.83	800,690	1.69	110,795	0.233	8,297,043	17.48	9,244,890	19.47	182,585	0.38	47,475,477
2005	50,392,934	67.55	1,624,042	2.18	1,429,261	1.92	221,166	0.296	7,050,149	9.45	13,306,545	17.84	579,142	0.78	74,603,239
2010	74,961,358	70.56	3,742,244	3.52	2,560,979	2.41	665,155	0.626	5,580,688	5.25	17,917,681	16.87	805,964	0.76	106,234,069
2015	83,697,393	66.65	6,639,779	5.29	4,012,092	3.19	2,056,636	1.638	4,758,105	3.79	22,555,622	17.96	1,863,153	1.48	125,582,780
2020	88,963,268	60.69	11,101,199	7.57	4,758,344	3.25	4,474,057	3.052	5,603,192	3.82	27,682,038	18.89	3,995,509	2.73	146,577,607

Source: Own research based on available data

Over a 30-year development period, coal-fired electricity plants have maintained their share at about 60% of total power production. There has been a significant decrease in biofuels, dropping from approximately 23% in 1990 to 3.8% in 2020. This decrease has been offset by increases in natural gas, rising from 1.47% in 1990 to 7.57% in 2020, renewables from 0.004% in 1990 to 3.5% in 2020, oil from 13.6% in 1990 to 18.89% in 2020, and nuclear energy from 0% in 1990 to 2.73% in 2020.

China's energy market, like in many other countries, particularly socialist or communist ones, operates on centralized and regulated premises aimed at ensuring fair access to resources and stable, predictable prices. This regulation and control are realized through centralized plans for power production and consumption.

Since 2015, following Document No. 9 as a pilot project aimed at increasing the efficiency of power production, local power markets have been promoted. This project saw success in 2022, with approximately 61% of the generated electricity being commercialized through market mechanisms, marking a 39% increase from 2021. The wholesale market, constituting around 79% of the market, is composed of bilateral wholesale electricity contracts.

The aim is to establish a national spot energy market, building upon the existing regional and provincial markets that have been operating as pilot projects since 2017. The new national spot market will ensure better distribution of energy resources and preserve local autonomy.

The establishment of the local electricity market means that priority access is granted to certain established power producers (such as those from renewable sources) and domestic users. Others are required to sell or purchase the needed energy on the market. Since 2018, coal energy producers that commenced operations after 2015 are mandated to sell the energy they produce on energy markets.

In 2021, the concept of a standard process for commercial and industrial users disappeared, and they obtained the required energy directly from energy producers or from the grid.

In 2020, the NRDC published "The General Rules for Medium- and Long-Term Power Trading," encouraging electricity producers and users to engage in these agreements.

The rules establish models of contracts between the energy generation company, the grid company, and the energy users. According to the law, the prices on medium and long-term contracts are negotiated between sellers and buyers but are subject to restrictions imposed by the type of electricity being traded.

For example, in the case of electricity produced from coal, the price can be negotiated within 20% above or below the indicative price established in medium and long-term contracts. For renewable sources, there is no such limit, and the price is freely negotiated. In addition to the electricity price, as in other countries, users should also pay for transmission, ancillary services, and local and governmental subsidies.

Although the roles of provinces in regulating local markets are maintained according to NRDC and NEA regulations, the State is taking decisive steps to ensure central coordination of the markets involved in the energy sector through Document No. 118. Centralization is scheduled to commence in 2025 and be fully implemented by 2030.

3.5 SWOT analysis of China's electricity market

Strengths	Opportunities
1. Extensive Energy Infrastructure: China is renowned for having one of the world's most expansive and diverse energy infrastructures, which includes a wide range of energy sources such as large-scale hydroelectric facilities, solar farms, and wind parks. *2. Strong State Support:* The Chinese government has shown a strong commitment to the energy sector, with	*1. Renewable Energy Development:* The renewable sector sees significant growth potential, bolstered by government initiatives and breakthroughs in clean energy technologies. *2. Expansion in Electric Vehicles (EVs):* The rapidly growing EV market is driving up electricity demand, opening up numerous

continuous support through initiatives and policies that focus on expanding renewable energy capabilities and cutting down on carbon emissions. *3. Innovation in Renewable Technologies:* Leading the charge in renewable energy technology, China stands as a major manufacturer of solar panels and wind turbines, securing its crucial position in the worldwide renewable energy market. *4. Rapid Growth in Renewable Energy:* China has rapidly expanded its renewable energy infrastructure, which has significantly decreased its dependence on traditional coal-based power sources.	opportunities for grid improvements and innovations in energy storage technologies. *3. Advancements in Energy Storage:* Advances in energy storage technology hold promise for grid stabilization by managing the intermittent nature of renewable energy sources. *4. Leadership in Global Energy:* China has the opportunity to expand its influence in global energy markets through exporting its renewable technology and participating in international clean energy programs.
Weaknesses *1. Continued Coal Dependence:* China's energy landscape continues to be dominated by coal, despite substantial investments in renewable energy. This reliance on coal power persists due to existing infrastructure and economic considerations, which results in continuous environmental degradation and public health concerns due to air pollution and greenhouse gas emissions. *2. Uneven Electricity Access:* Access to electricity in China is marked by significant regional disparities. While urban areas enjoy high levels of reliability and advanced infrastructure, rural and certain remote regions suffer from inconsistent power supplies and outdated facilities, leading to a gap in energy equity and hindering economic and social development in less urbanized areas. *3. Grid Modernization Challenges:* The integration of renewable energy into China’s national grid is impeded by the grid’s outdated design, which was primarily built	Threats *1. Economic Volatility:* Sharp downturns in the economy can dramatically curtail the availability of financial resources earmarked for critical energy projects, including the construction and modernization of infrastructure, as well as the development and implementation of emerging technologies in the energy sector. *2. Global Political Frictions:* Persistent geopolitical tensions and unresolved trade disputes could significantly undermine the stability and reliability of international supply chains. This disruption is particularly critical for the renewable energy sector, which depends heavily on the global flow of materials vital for manufacturing advanced technological components like solar panels and wind turbines. *3. Susceptibility to Natural Catastrophes:* China's energy framework is particularly vulnerable to the devastating impacts of natural disasters. Such events can lead to

for stable, centralized sources rather than the variable and dispersed nature of renewables like wind and solar. This results in inefficiencies and limitations in harnessing the full potential of renewable energy sources, necessitating substantial upgrades to both hardware and management systems to enhance grid resilience and flexibility.	extensive disruptions in energy production and distribution systems, with especially severe consequences in regions that depend heavily on localized energy sources, such as hydroelectric power stations.
4. Complex Regulatory Framework:	*4. Rapid Technological Changes:*
Investigating the regulatory landscape of China's electricity market can be daunting due to its complexity and lack of transparency. This intricate framework involves multiple layers of bureaucracy and often inconsistent policies across different regions and sectors, creating hurdles for investment and innovation. Such regulatory complexity can deter both domestic and international investors, potentially slowing down the pace of technological advancements and market-driven efficiencies. Despite advances in renewable energy, China's energy system remains heavily coal-dependent, leading to ongoing environmental and health challenges.	The fast pace of technological advancement may lead to current systems becoming outdated, necessitating substantial investments for upgrades or replacements to maintain competitive edge.

IV. CONCLUSION

China's electricity sector has experienced significant transformation over the last several decades, evolving from a tightly controlled government-run system to a more liberalized and diverse energy market. The transformation is part of a larger narrative of China's rapid economic advancement and its increasing emphasis on sustainable development and energy security.

Initially driven by the demands of a fast-growing industrial sector and massive urban expansion, the electricity market in China was strained by supply shortages and inefficiencies, prompting the need for substantial governmental reforms.

Historically dominated by coal and overseen by state enterprises, the Chinese electricity market was marked by significant environmental challenges and operational inefficiencies. To address these issues, China enacted several reforms aimed at diversifying its energy sources and improving the efficiency and reliability of its electricity production systems. Laws such as the Electric Power Law and the Renewable Energy Promotion Law were instrumental in laying down a regulatory foundation that promoted safer and more environmentally sustainable practices in energy production.

The drive towards a market-oriented system began with efforts to decentralize control, introduce competition, and reduce state monopoly in the electricity sector. This included establishing local electricity markets and developing a national spot energy market. These initiatives aimed to enhance efficiency and reduce costs by promoting competitive practices and enabling direct transactions between energy producers and consumers.

Currently, China's electricity market is characterized by its vast scale and the pivotal role played by major state-owned grid operators such as the State Grid Corporation of China and the China Southern Power Grid. These companies are vital to in managing the nation's extensive and intricate grid infrastructure, ensuring system stability, and integrating an increasing percentage of renewable energy sources into the power mix.

Despite progress in diversifying energy sources, significant regional disparities in energy access persist, and integrating intermittent renewable energy sources into a grid originally designed for stable, centralized power sources remains a challenge. Additionally, coal continues to play a major role in China's energy landscape, contributing to ongoing environmental and public health issues.

Concluding, while significant progress has been made toward liberalizing and greening China's electricity market, the path forward requires continued reforms. The sector must embrace further technological advancements and foster international collaborations to ensure that China can meet its future energy demands in a sustainably and efficiently manner.

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