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Editorial

Orissa Commerce Association is working consistently with a pious mission to serve the research community of India and beyond, by publishing *'Orissa Journal of Commerce'*, a quarterly peer-reviewed research journal for over four decades. This Issue of the Journal comprises of ten research papers / articles from diverse fields of commerce, economics, management and public policy.

The *first paper* endeavors to examine the impact of Goods and Service Tax (GST) adoption on the Indian economy. The result indicates that the GST implementation has an initial lagged negative response on the Indian economy, which is wiped off afterwards. Further, the *second paper* explores the role of anthropomorphism in impacting behavioural intention to use VA through two intervening variables, i.e., perceived usefulness, and perceived ease of use. In addition, the research explores the effect of behavioural intention on purchase intention. The findings showed that anthropomorphism positively and moderately influences perceived usefulness and perceived ease of use.

The *third paper* aims to study the university teachers' engagement and the effect of demographic variables on it. The result reveals that age, educational qualification, designation, and experience have a significant effect on teachers' engagement. But gender, marital status, and stream have no significant effect on it. The objective of the *fourth paper* is to understand the perception of second-generation internal family successors, towards their family business, with specific reference to the construction sector in India. A linkage between Self Determination Theory and sector specific successor motivation is established by this study. The *fifth paper* objective is to scrutinize client acceptance of financial technology offerings. The study conducted amongst active clients of commercial banks, garnering 387 valid responses. Results unveiled that consumer trust considerably influences the financial technology acceptance attitudes.

The *sixth paper* analysed the current account response to international economic factors namely, oil price volatility, exchange rate of Indian rupee, trade openness, net foreign assets and home country inflation, using data from 2001 to 2020. The study revealed that a hike in oil price volatility, net foreign assets and home country inflation leads to increase in current account deficit. The *seventh article* examines the impact of gender budgeting practice on women's empowerment in Odisha. The data analysis reveals that the component, pattern, and growth of spending on schemes for women are moving in the desired direction till 2019-20, but, in 2020-21 it was disturbed on account of COVID-19.

The *eighth article* aimed to study the impact of HR practices on organizational citizenship behavior and find out various HR practices of organizations that help in employee retention. Findings of the study suggested that there is a significant and positive impact of HR practices. The *ninth paper* analyzes the motivating factors attracting the tourists towards Nilgiris Mountain Railway. The study concludes that the UNESCO's World Heritage Tourism Sites, the Nilgiri Mountain Railway (NMR) gains its

momentum on the Queen of the Hills in the Nilgiris district. The *tenth paper* aimed to find the factors affecting the use of the UPI and E-wallet and their impact on the formalization of economy. In this study, bibliometric analysis is done through VOS viewer software for finding research gaps. The result reveals that there is a direct effect of the digital financial inclusion on the acceptance of UPI and E-wallet system which leads to formalization of economy.

The readers and our well-wishers will find this '3rd Issue of OJC 2023' with papers of great interest and high intellectual diversity. Hope the readers will enjoy reading this Issue and encourage us to stride forward.

Dr. Malay Kumar Mohanty

(Managing Editor)

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Economic Impact of GST Reforms on Indian Economy: An Empirical Analysis

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Keywords

EPU, GST reform, Impulse response function, Sectoral indices, VAR

JEL Classification
B26, C32, H25, H71

Abstract: This study endeavors to examine the impact of Goods and Service Tax (GST) adoption on the Indian economy. The study has employed the Economic Policy Uncertainty index (EPU) as a proxy for measuring the uncertainty caused in the Indian economy due to the policy change in the indirect taxation system in India. Moreover, the study has used the NSE sectoral Indices as the proxy to the Indian economy. The study has performed the Impulse Response Function after constructing a vector autoregressive model by modeling the EPU, and NSE sectoral indices as endogenous variables and other macroeconomic variables (i.e. call rate, CPI, and exchange rate) as exogenous variables. The result indicates that the GST implementation has an initial lagged negative response to the Indian economy which is wiped off after a time period of around 2 and half months. This study may act as a guide for the government and policymakers in the future policy formation and announcement of future macroeconomic policies.

1. Introduction

GST is a major tax reform in the tax structure of the country by unifying all indirect taxes under an umbrella to create 'One Nation, One Market, and One Taxation' by removing the cascading effect of taxation in India (Sherawat and Dhanda, 2015). Worldwide, already 160 countries have adopted the GST in their respective territories. The implementation of the GST is anticipated to endow with the much-needed stimulant for the economic growth of the Indian economy by changing the existing taxation system for the free flow of goods and services (Khoja and Khan, 2020). However, the proposed GST regime for India's economy was well criticized before its implementation due to its inflationary

and negative impact on a few sectors in other countries. Valadkhani and Layton (2004) revealed that the adoption of GST increases the prices of goods and services by 2.8% during its implementation stage in Australia. However, the impact of inflation is found to be transitory which prevails only in the short run during its implementation phase. Palil and Ibrahim (2011) posit that customers are concerned for increase of at least 4% with the GST adoption in Malaysia. The introduction of GST in Malaysia has sparked debate among academicians, professionals, policymakers, and the general public on how GST will affect the cost of products and services. Malaysians also whispered that the GST adoption would have an injurious effect on society and will cause price increases, as their country was already depends a lot on household spending (Islam *et al.,* 2017). Similarly, Sankar (2017) has found that the GST adoption in India has a favorable impact on the Indian economy as a whole. But upon performing sectoral categorization, the GST has both positive and negative effects on every industry, creating a speculative environment of uncertainty and anxiety among investors and shareholders. Nayak *et al.,* 2022 found a positive impact of indirect tax revenue on the Indian GDP. Renjith (2021) observed the sustainable debt policies of Indian states during the GST regime. They found that the debt policy is sustainable in only 8 states out of 23 states under the study. Further, only 5 states are sustainable as well as solvent. Similarly, Haron and Ayojimi (2018) investigated the effect of GST announcement on the stock market index of Malaysia namely KLCI and KLCI-F. They established that the stock market index volatility raises with the announcement of GST in Malaysia in comparison to the pre-GST period which demonstrates that the awareness programs organized by the government before the announcement of the GST does not yield any meaningful results. The announcements of macroeconomic news by the government usually come as a shock and create an environment of uncertainty in an economy as some sections of the society gets benefit from it while other sections bear it up. Similarly, the announcement of the GST in the Indian economy has changed the tax structure for the whole Indian economy as some industries have gained a benefit from it, while others have borne up an increase in their tax rates. The adoption of the GST is a new experience for the Indian economy and households as it creates an environment of anxiety, worries, and uncertainty in the economy for taxation to various industries which can cause worries, shocks, and uncertainties indirectly to numerous sectors of the Indian economy. The existing literature has confirmed the notion that changes in government micro and macroeconomic policies affect the daily fluctuations in stock prices of various sectoral indices. Therefore, it becomes imperative to study the impact of GST on the Indian economy before and after the GST era by covering different sectors of the Indian economy. The study has undertaken four major sectors of the Indian economy i.e. FMCG, automobiles, Indian financial services, and realty sectors of NSE as a proxy to the Indian economy which are significantly impacted by the GST adoption in India. The study has taken the FMCG sector which is bearing a tax rate of around 22-24% in the pre-GST era and after the adoption of GST, the FMCG sector GST rate is reduced to 18%. Similarly, the previous rate of VAT and Excise in the automobile sector was on an average of 26.50% to 44% which is higher than the GST current rates of 18% and 28% in the auto sector. The service sector, on the other hand, has withstood a minor increase in tax rate which increases the tax incidence for the service sector. The financial services i.e. banking, and stock trading firms which are bearing a tax rate of around 14.5% under the VAT system are transferred into the GST slab

of 18%. Similarly, the realty sector has also gained a benefit with a decrease in tax rate under the GST regime. The study has employed the Economic Policy Uncertainty (EPU) index to measure the uncertainty originated in the economy due to its major indirect tax reforms in India.

The rest of the study proceeds as follows: Section 2 proffers a summary of previous empirical studies conducted in this domain. Section 3 narrates the objective and hypothesis formulation. Section 4 explicates the research methodology and the successive sections summarize the results, conclusive remarks with policy implications of the study.

2. Literature Review

The existing literature on policy uncertainty is brimming with a lot of studies illustrating that how policy uncertainty in an economy negatively impacts its GDP and investment. The economic risk associated with vacillating regulatory frameworks and future government policies is known as policy uncertainty. Bloom (2014) found in their study that continuous fluctuations in policy uncertainty result in slowing down the investment and hiring of employees as corporate sectors are often more hesitant in making crucial or costly decisions in vacillating regulatory frameworks. Levine (1991) demonstrates that the state growth rate is affected by the tax policy directly and indirectly by modifying the investment incentives and underlying financial contracts. Similarly, Barrero *et al.,* (2017) found that a boost in policy uncertainty will have implications in long run on economic growth as well as on capital investment. Bachmann *et al.,* (2010) found that uncertainty is accompanied by adverse economic times and both run concurrently. Bhagat *et al.,* (2013) found that there persists an inverse relationship between uncertainty in economic policy and fixed investment in India. All these studies suggest that it is necessary to have stable economic policies for the continued economic growth of a country. Similarly, Cakan *et al.*, (2015) found that the volatility shocks are persistent and any bad news about the US inflation increases the asymmetric volatility in 5 out of 12 countries under the study and that volatility asymmetric jump up with bad news on US unemployment in 4 out of 12 countries. Haron and Ayojimi (2018) discovered that the stock market index volatility increased with the announcement of GST in Malaysia which demonstrates that the awareness programs organized by their respective government before the announcement of the GST do not yield meaningful results. Similarly, Hoseini (2019) investigated the impact of tax policy change from Sales tax to Value Added Tax (VAT) adoption in India on informal sectors for different activities. They found that the theoretical findings are supported by empirical data from the Indian services sector, which also demonstrates a notable rise in forward-linked activity tax compliance after the implementation of the VAT in India. Bhattarai *et al.,* (2019) examined the impact of taxation reforms in Vietnam's economy through the application of the CGE model. They found that the government should increase the VAT rate from 10 to 12% and should decrease the corporate income tax rate from 20 to 17%. Similarly, Panga *et al.*, (2018) explored the effect of GST policy change on indices of S&P BSE. They observed that the GST adoption has no significant impact on selected sectors of BSE. Joy *et al.,* (2020) also investigated the impact of GST on shareholder investment and stock market operations. They found that the GST adoption will mark the share market operations costly in India. Similarly, Saran C (2018) studied the impact of the indirect tax policy change in India on sectoral indices of the NSE and Nifty-50 index using the OLS, T-GARCH, and GARCH modeling.

They observed that out of 10 sectors and the Nifty index selected for the study, only two sectoral indices have depicted a positive impact of the GST announcement in India. John and Dhannur (2019) also explicate that GST has adverse effect for service sector in India, but it does not have any statistical significant effect for the manufacturing sector in India. Nayaka and Panduranga (2021) also found that the tax collections and filing of GST returns are increasing in India at a rapid rate but the compensation to states is continuously delayed by the government which is affecting state government spending on numerous welfare activities. Similarly, Sankar (2017) has found that the GST announcement has a favorable impact on the Indian economy as a whole. But upon performing a sectoral classification of the Indian economy, the GST has both positive and negative effects on every industry. Therefore, it becomes imperative to explore the effect of GST on the Indian economy by bifurcating it into different sectors as there is a vast paucity of empirical studies on this phenomenon.

3. Relevance of the Current Study

The above extensive literature shows that a lot of studies have been conducted in the past on stock market volatility due to global crises, taxation, and monetary policy changes at national and international levels. However, this study is novel from past studies in many ways conducted in this area for India. Firstly, past studies have been mainly centered on the impact of the global crisis and there is hardly any empirical study on exploring the effect of GST in India. This study is different as it primarily focused on analyzing the impact of the implementation of GST on the Indian economy through the application of the VAR and IRF analysis. Moreover, this study also takes some exogenous macroeconomic variables which equally triggered the Indian market volatility to avoid spurious results while investigating the impact of GST on various sectoral indices of NSE as a proxy to the Indian economy. This study adds to the existing literature by examining the association between macroeconomic news uncertainty and its impact on various sectors in an emerging and developing stock market. Although the adoption of GST has passed the time period of 5 years, but there is no empirical study on the impact of GST in India. Finally, this study contributes in developing a better understanding of how macroeconomic news announcement uncertainties affect small emerging markets i.e. India, whose institutions, organizations, and structures are dissimilar to other developed markets.

4. Objective and Hypothesis of the Study

The current study aims at examining the impact of GST implementation on the Indian economy. For this purpose, the study has taken the four major sectors namely, FMCG, Auto, Indian Financial Services, and Realty sectors. This study has also included the EPU index to measure the uncertainty caused in the Indian economy due to the implementation of GST in India. In this regard, the following hypothesis has been constructed to achieve the aforementioned objective of the study:

H_{01}: There is no significant impact of GST implementation on the selected sectors considered for the study.

5. Data and Research Methodology

The present study has examined the impact of the adoption of GST on the Indian economy as the announcement of GST in India has changed the tax structure for the whole economy by creating an

environment of anxiety and uncertainty among different stakeholders. Therefore, this study endeavors to inspect the economic impact of GST on the Indian economy by taking NSE sectoral indices as a proxy for the Indian economy. The study has undertaken four major sectors of the Indian economy i.e. FMCG, auto, Indian financial services, and realty sectors that are vastly impacted by the GST adoption in India. For fulfilling this objective, the study has taken the NSE sectoral indices as a proxy for the Indian economy. The study has used the monthly closing prices of NSE sectoral indices from January 2013 to December 2021 as the monthly data avoids the spurious correlation which is often detected in annual or quarterly data (Patra and Poshakwale, 2006). The total time period of the study has been classified into pre and post-GST implementation equivalent time period of 4 years. The monthly closing prices of NSE sectoral indices are collected from the CMIE ProwessIQ database. Similarly, in order to measure the uncertainty triggered by the announcement of GST in the Indian economy, the EPU index (Economy Uncertainty Index) formulated by Baker *et al.,* 2016 has been utilized in this study. The news-based Indian EPU index has been constructed using the same approach as they use for the US-based EPU Index by including the 7 Indian newspapers. The EPU index is an uncertainty index of a country that illustrates the relative frequency of the newspaper articles of a particular country that include three terms relating to the economy (E), policy (P), and uncertainty (U) of their respective country. Moreover, to control the impact of other macroeconomic variables on NSE sectoral indices volatility, it becomes imperative to include some exogenous macroeconomic variables that directly affect the volatility of sectoral indices in India. A lot of past studies have already affirmed that macroeconomic factors have an impact on stock market returns (Fama and Schwert, 1977; Lee 1992). Similarly, Booth and Booth (1997), Ibrahim and Aziz (2003), and Chen (2007) found that the uncertainty in the inflation and exchange rate, money growth, and interest rates may affect the financial market and return volatility. Moreover, Tripathy (2011) found that any modification in the interest rate, currency rate, and global market considerably affects the stock market in India and vice-versa (Mohanty *et al.,* 2023; Singh *et al.*, 2020). Therefore, this present study has taken macroeconomic variables (Exchange rate, call rate, and CPI,) as exogenous variables to prevent the biasness in the results of the study. The growth of the call rate has been utilized as a representative of the interest rate in the Indian economy. The data on the exchange rate, call rate, and CPI have been compiled from the RBI website. The price series of the Nifty-50 sectoral indices, CPI, and the exchange rate have been transformed by the use of logarithm compounding returns.

5.1. Unit Root Test and Model Specification

Before applying any statistical modeling to financial time series, there is a universal precondition to check the stationarity of the financial time series as modeling with non-stationary data may yield spurious and misleading results (Haron and Salami, 2015). To apply any econometric modeling, the series should be stationery (Priyanka *et al.,* 2022). For this purpose, the study has applied ADF and PP unit root test statistics with the following statistical equation:

$$\Delta y_t = \propto + \beta t + \delta y_{t-1} + \Sigma_{i=1}^{k} \phi_i \Delta y_{t-i} + \varepsilon_t \quad (1)$$

$$\Delta y_{t-1} = \propto_0 + \rho \gamma_{t-1} + \varepsilon_t \quad (2)$$

Where y_t = price series, $\propto$ = constant, β = coefficient on a time trend, k = maximum length of the lagged dependent variable, ϕ_i = parameter of lagged first, Δy_t = first difference of series y_t, ε_t = pure white noise error term.

The return series of the sectoral indices, CPI, and exchange rate are stationary at level after converting them into natural logarithms. Similarly, interest growth rates are stationary at level ($I\sim(0)$).

In order to examine the response of sectoral indices (endogenous variable) due to shock caused by the adoption of GST in India from the EPU index, the study has employed the vector autoregressive model (VAR). VAR models are vastly utilized for multivariate time series in finance in which every variable is a linear function of itself and other variables lag value. Moreover, the VAR analyses allow the researchers to use Impulse Response Functions and Variance decomposition to examine the impact of a shock or policy change in an economy. The equation and matrix representation of a multivariate VAR model with three different time series variables denoted by X_t, Y_t, and Z_t with lag 1 is as below:

$$X_t = \propto_1 + \varnothing_{11} X_{t-1} + \varnothing_{12} Y_{t-1} + \varnothing_{13} Z_{t-1} + U_t$$

$$Y_t = \propto_2 + \varnothing_{21} X_{t-1} + \varnothing_{22} Y_{t-1} + \varnothing_{23} Z_{t-1} + V_t$$

$$Z_t = \propto_3 + \varnothing_{31} X_{t-1} + \varnothing_{22} Y_{t-1} + \varnothing_{33} Z_{t-1} + W_t$$

Matrix representation

$$[X_t\ Y_t\ Z_t] = [\propto 1\ \propto_2\ \propto_3] + [\varnothing_{11}\ \varnothing_{12}\ \varnothing_{13}\ \varnothing_{21}\ \varnothing_{22}\ \varnothing_{23}\ \varnothing_{31}\ \varnothing_{32}\ \varnothing_{33}]\ [X_{t-1}\ Y_{t-1}\ Z_{t-1}] + [U_t\ V_t\ W_t]$$

Where X_t, Y_t, and Z_t are stationary variables. U_t, V_t and W_t are white noise disturbances or shock terms. The coefficients in the main matrix are computed through OLS.

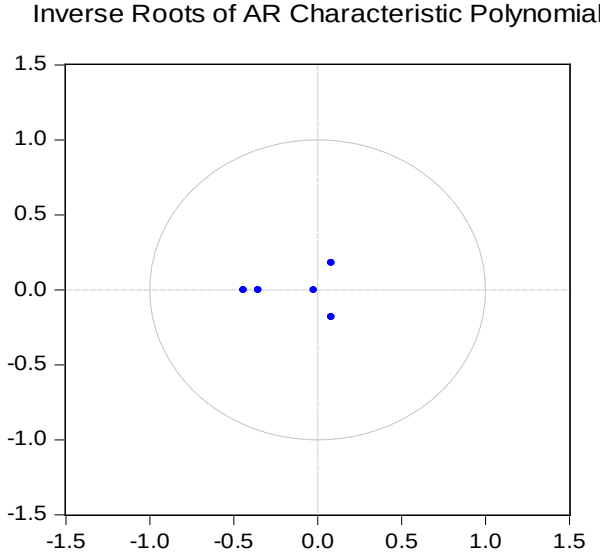

Figure I: Inverse Roots of constructed VAR model

The study has also employed the inverse roots function to examine the stability of the VAR model. Figure 1 demonstrates that there is no unit root outside the circle which validates the stability of the estimated VAR model.

The selection of the optimum number of lags of the VAR model has been performed based on FPE, SIC, and AIC criteria which suggest the optimum number of lags to be 1. The equation of the VAR model is given below where each lag represents a month:

LNEPU = LNEPU.l1 + LNFMCG.l1 + LNAuto.l1 + LNIFS.l1 + LNRealty.l1 + const + Int+ LNExR + LNCPI

LNFMCG = LNEPU.l1 + LNFMCG.l1 + LNAuto.l1 + LNIFS.l1 + LNRealty.l1 + const + Int + LNExR + LNCPI

LNRealty = LNEPU.l1 + LNFMCG.l1 + LNAuto.l1 + LNIFS.l1 + LNRealty.l1 + const + Int + LNExR + LNCPI

LNIFS = LNEPU.l1 + LNFMCG.l1 + LNAuto.l1 + LNIFS.l1 + LNRealty.l1 + const + Int + LNExR + LNCPI

LNAuto = LNEPU.l1 + LNFMCG.l1 + LNAuto.l1 + LNIFS.l1 + LNRealty.l1 + const + Int + LNExR + LNCPI

As depicted in the above equation, the endogenous variables are regressed onto each other and the exogenous variables appear as independent variables. In a VAR model, the individual coefficient estimation provides only a limited amount of information about the system's response to a shock because all the variables in a multivariate VAR model are dependent on one another. Therefore, to cope with this problem and to provide a holistic view of the model dynamic's behavior, the study has employed the Impulse Response Function (IRF). The IRF analysis is an advanced form of the Forecast Error Impulse Response (FEIR) analysis. An important limitation of the FEIR is that it cannot be used to examine the contemporaneous reactions of variables.

6. Results and Discussion

Table 1 display the result of the unit root test which is carried out at level with ADF and PP test with the trend and trend & intercept. The major differentiation between the PP and ADF unit root tests is how both of these tests deal with the serial correlation. The ADF test exercises parametric auto regression to simulate the structure of errors, whereas the PP test does not consider any serial correlation (Jain *et al.*, 2013). A financial time series is assumed to be stationary when the data series is not displaying any trend over time or the statistical properties i.e. mean, variance, and covariance of the distribution remain constant throughout time. If a financial series is found to be non-stationary, then it needs to be corrected by employing differencing (Idrees *et al.*, 2019).

The result of the ADF and PP test illustrates that all variables considered in the study are statistically significant and stationary at the level as computed t-statistics are greater than the test critical values as shown in table I. The study has computed both test statistics for both intercept, and trend & intercept, both of which confirm that the series under consideration is stationary at the level. Hence, in further

Table 1: Results of Unit Root Test

Variable	*Test Statistic*	*P-value*	*Critical Value*	
			1%	*5%*
LNEPU	-10.221*	0.0000	-4.046	-3.452
LNAuto	-9.634*	0.0000	-4.046	-3.452
LNIFS	-10.323*	0.0000	-4.046	-3.452
LNRealty	-9.736*	0.0000	-4.046	-3.452
LNFMCG	-9.147*	0.0000	-4.046	-3.452
LNCPI	-18.584*	0.0000	-4.046	-3.452
LNExR	-9.727*	0.0000	-4.046	-3.452
Int	-14.745*	0.0000	-4.046	-3.452
LNEPU	-53.233*	0.0001	-4.046	-3.452
LNAuto	-9.634*	0.0000	-4.046	-3.452
LNIFS	-10.396*	0.0000	-4.046	-3.452
LNRealty	-9.722*	0.0000	-4.046	-3.452
LNFMCG	-12.192*	0.0000	-4.046	-3.452
LNCPI	-21.199*	0.0000	-4.046	-3.452
LNExR	-17.282*	0.0000	-4.046	-3.452
Int	-22.597*	0.0000	-4.046	-3.452

Source: Authors' Own Compilation

* Sig at 1%

analysis, all the variables have been considered as integrated of I(0) after converting them into natural logarithms.

Table 2: Results of VAR Estimation

	LNEPU	*LNFMCG*	*LNAUTO*	*LNIFS*	*LNREALTY*
LNEPU(-1)	-0.374146	0.012354	0.002755	-0.001342	-0.008468
	(0.09421)	(0.01094)	(0.01901)	(0.01859)	(0.02930)
	[-3.97140]	[1.12897]	[0.14491]	[-0.07220]	[-0.28903]
	0.0001*	0.2595	0.8848	0.9425	0.7727
LNFMCG(-1)	1.302401	-0.033976	0.248545	0.127726	-0.125778
	(1.03995)	(0.12080)	(0.20987)	(0.20523)	(0.32342)
	[1.25237]	[-0.28127]	[1.18429]	[0.62237]	[-0.38890]
	.2110	0.7786	0.2369	0.5340	0.6975

Contd. table 2

	LNEPU	*LNFMCG*	*LNAUTO*	*LNIFS*	*LNREALTY*
LNAUTO(-1)	-1.927228	0.002188	0.168437	0.193478	0.344119
	(0.76117)	(0.08841)	(0.15361)	(0.15021)	(0.23672)
	[-2.53193]	[0.02474]	[1.09652]	[1.28804]	[1.45368]
	0.0117**	0.9803	0.2734	0.1983	0.1467
LNIFS(-1)	1.071086	0.154911	-0.273938	-0.344674	-0.020126
	(0.92431)	(0.10736)	(0.18653)	(0.18241)	(0.28746)
	[1.15880]	[1.44286]	[-1.46858]	[-1.88960]	[-0.07001]
	0.2471	0.1497	0.1426	0.0594	0.9442
LNREALTY(-1)	-0.756715	-0.090331	-0.015027	0.072032	-0.075651
	(0.49819)	(0.05787)	(0.10054)	(0.09831)	(0.15494)
	[-1.51893]	[-1.56100]	[-0.14946]	[0.73267]	[-0.48827]
	0.1294	0.1192	0.8813	0.4641	0.6256
C	-0.011145	0.006854	0.007516	0.011961	0.003288
	(0.03531)	(0.00410)	(0.00713)	(0.00697)	(0.01098)
	[-0.31558]	[1.67086]	[1.05458]	[1.71623]	[0.29940]
	0.7525	0.0954	0.2921	0.0868	0.7648
Int	-0.002670	9.09E-05	-9.14E-05	0.000276	0.000191
	(0.00217)	(0.00025)	(0.00044)	(0.00043)	(0.00067)
	[-1.23318]	[0.36154]	[-0.20924]	[0.64648]	[0.28387]
	0.2181	0.7178	0.8343	0.5183	0.7766
LNExR	0.041704	-0.097373	-0.275682	-0.324236	-0.299995
	(0.47970)	(0.05572)	(0.09681)	(0.09466)	(0.14919)
	[0.08694]	[-1.74755]	[-2.84776]	[-3.42509]	[-2.01089]
	0.9308	0.0812	0.0046*	0.0007*	0.0449**
LNCPI	0.000300	0.000826	0.000371	0.000301	0.000172
	(0.00306)	(0.00036)	(0.00062)	(0.00060)	(0.00095)
	[0.09788]	[2.32192]	[0.59995]	[0.49819]	[0.18027]
	0.9221	0.0206**	0.5488	0.6186	0.8570

Source: Authors' Own Compilation

Standard errors are provided in () & t-statistics in [ ]

*, ** denotes Significant at 1 and 5% respectively.

The results of the VAR analysis as presented in table 2 illustrate that the EPU is negatively affected by its own lagged value and lagged value of auto sector indices. Similarly, lagged value of EPU is negatively affected by its own current value. The auto sector, nifty financial services sector, and realty sector are negatively impacted by the exchange rate as indicated by the negative coefficient and significant

p-value. Similarly, the FMCG sector is affected by the consumer price index value as illustrated by the significant p-value. As it is observed that some of the estimates have not entered significantly in the constructed vector autoregressive model, therefore, the study has computed a restrictive VAR model to generate the impulse response function of our computed VAR model.

Table 3: Results of VAR Residual Serial Correlation LM Test

H_{02}: There is no serial correlation at lags 1 to h of the computed VAR model						
Lags	*LRE* stats*	*DF*	*Probability Value*	*Rao F-statistic*	*Df*	*Probability Value*
1	27.37696	25	0.3373	1.101735	(25, 332.1)	0.3379
2	48.83298	50	0.5202	0.976489	(50, 386.5)	0.5226

Source: Author's Computations

Table 4: Results of VAR Residual Heteroskedasticity Joint Tests (Levels and Squares)

H_{03}: There is no existing ARCH effect up to order q in the residuals (e_t)		
Chi-sq	*Df*	*Prob.*
229.4812	240	0.6761

Source: Authors' Own Compilation

Table 5: Results of VAR Residual Heteroskedasticity Tests Individual Component

Dependent	*F(16,90)*	*Prob.*	*Chi-sq. (16)*	*Prob.*
resi1*res1	0.334133	0.9920	5.999566	0.9881
resi2*res2	0.528433	0.9254	9.188745	0.9054
resi3*res3	2.078630	0.1602	28.87125	0.1248
resi4*res4	1.621582	0.0790	23.94360	0.0907
resi5*res5	1.036273	0.4277	16.64565	0.4089
resi2*res1	0.592974	0.8816	10.20400	0.8558
resi3*res1	0.915611	0.5542	14.97878	0.5262
resi3*res2	1.730858	0.0547	25.17746	0.0668
resi4*res1	0.565571	0.9015	9.775524	0.8781
resi4*res2	1.488087	0.1217	22.38484	0.1312
resi4*res3	1.796256	0.4372	25.89850	0.0555
resi5*res1	0.459503	0.9598	8.080662	0.9464
resi5*res2	1.236652	0.2568	19.28424	0.2542
resi5*res3	1.772319	0.2475	25.63606	0.0594
resi5*res4	1.525586	0.1080	22.82857	0.1184

Source: Authors' Own Compilation

Table 6: Results of VAR Residual Normality Tests Cholesky Orthogonalization

H_{04}: Residuals are normally distributed			
Components	*JB Statistic*	*Df*	*Prob. Value*
1	1.354247	2	0.5081
2	0.375826	2	0.8287
3	6.88356	2	0.7326
4	1.645494	2	0.4392
5	17.92197	2	0.1021
Joint	28.181097	10	0.738

Source: Authors' Own Compilation

The diagnostic testing which is performed after computing the restricted VAR model is presented in Tables 3 to 6. The results of the serial autocorrelation LM test as presented in table 3 confirm that there is no autocorrelation at lags 1 to h in the error terms of the computed Vector autoregressive model as indicated by the insignificant p-value. Similarly, the p-value of the VAR Residual Heteroskedasticity Joint and individual component tests confirms the rejection of the null hypothesis which shows that the VAR model has no ARCH effect and the variance of the residuals is constant as shown by insignificant p-values in table 4 and 5 respectively. Similarly, the result of VAR residual normality tests (Cholesky Orthogonalization) confirms that the residuals are multivariate normally distributed in the restricted VAR model which confirms the presence of the normality in the computed restricted VAR model as indicated by insignificant joint Jarque-Bera statistics. Upon passing all the diagnostic testing, the IRF analysis was performed to examine the responses of various sectors of the Indian economy due to shocks caused by the error or innovation term of the EPU. This will show the impact of one unit change in the error term of EPU on various sectors of the Indian economy under the study.

The results of the IRF analysis confirm that the response of the FMCG, Auto, realty sector, and Indian Financial Service (IFS) to the shocks caused by the innovation or error term of the EPU is contemporaneous negative as indicated in figures 2 to 5 respectively. This negative response of the FMCG sector pushes up in an upward positive direction up to 2 months time period and afterward, it declines abruptly until the 3rd period when it hits its steady-state value. After this, the FMCG sector rises gradually towards the positive region and just as the pendulum of the clock goes on oscillating around the point of rest and ultimately comes to a standstill, similarly, the FMCG sector tends to move around the base or zero line.

Similarly, the negative response of the Realty sector pushes up in an upward positive direction up to the 3rd month where it takes its peak point, and afterward, the 4th month tends to merge in the zero line. Similarly, the negative response of the Auto sector pushes up in an upward positive direction up to the 2nd month's time period where it takes its peak point and afterward it tapers off gradually towards the zero point and after the 3.5th month, it tends to merge in the zero line. Similarly, the

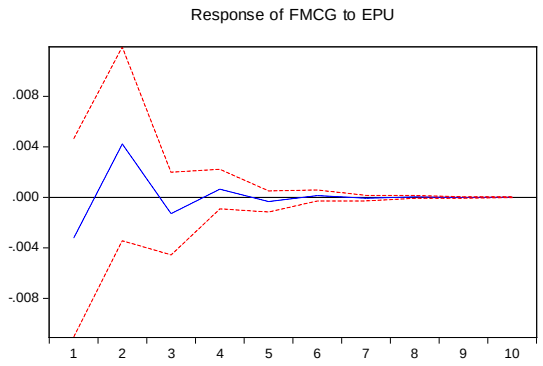

Figure 2: Impulse Response of FMCG Sector to EPU

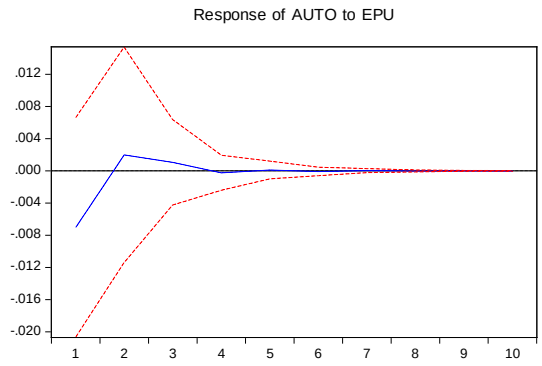

Figure 3: Impulse Response of Auto Sector to EPU

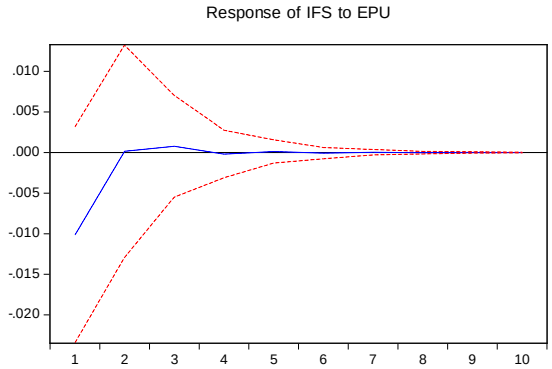

Figure 4: Impulse Response of IFS Sector to EPU

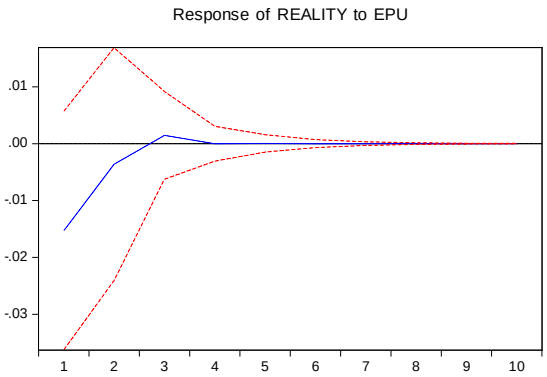

Figure 5: Impulse Response of Realty Sector to EPU

negative response of the IFS sector pushes up in an upward positive direction abruptly up to the 2nd month time period and afterward it going to increase towards the positive region gradually until the 4th month and after this point, it tends to merge in the zero line. The realty and service sector has bear up the negative instantaneous response for the longest time period due to GST adoption in India. Thus the impulse response function depicts an overall negative response of all four sectors to the one unit shocks in the EPU due to the uncertainty in the Indian market because of the announcement of the indirect tax reform (GST announcement) in the Indian economy by the Indian government. The findings show that, despite the reduction in tax rates for various sectors, the overall impact of GST on the Indian economy is negative. Therefore, the study rejects the formulated null hypothesis and concludes that the GST implementation negatively impact the major sectors of the Indian economy.

It is depicted from the results of the granger causality test that EPU does not Granger cause FMCG, realty, and Indian financial service sectors of the Indian economy since the p-value is greater than 0.05. However, the Auto sector of the Indian economy is granger cause by economic policy

Table 7: Results of the VAR Granger Causality and Block Exogeneity Wald Test

Sectors	*Chi-Sq*	*df*	*Prob.*	H_0
FMCG	1.568440	1	0.2104	EPU does not granger cause FMCG.
Auto	6.410680	1	0.0113**	EPU does not granger cause Auto.
Realty	2.307163	1	0.1288	EPU does not granger cause Realty.
IFS	1.342814	1	0.2465	EPU does not granger cause IFS.
Joint	13.60724	4	0.0087*	EPU does not Granger Cause FMCG, Auto, Realty, and IFS sector jointly.

Source: Author's Computations * Sig at 1% and 5%

uncertainty (EPU) which indicates that there subsists a unidirectional relationship between FMCG and EPU. However, the joint results show that there is no relationship between EPU and FMCG, auto, realty, and IFS sector of the Indian economy. Thus, the study concludes that there is no contemporaneous causality between EPU, FMCG, realty, auto, and IFS.

7. Conclusion

This study aims to observe the impact of the implementation of GST reform on the Indian economy. The finding of the study illustrates that in spite of the reduction of taxation rate for the realty, FMCG, and auto sector, the instantaneous impact of GST comes as a shock for these sectors resulting in an adverse or negative initial impact on the Indian economy which is covered up with a time range of near 2-3 months. On the contrary, the service sector has faced a slight increase in its tax rate under the GST regime. The service sector has also faced a negative instantaneous effect with the announcement and implementation of GST in India. Thus, the results indicate that the shocks caused by one unit change in EPU negatively affect the Indian economy as indicated by all the four sectors under the study in the initial stage. The realty and service sector has bear up the negative instantaneous response for the longest time period due to the adoption of GST in India. Thus, the results show that the uncertainty in the Indian economy created due to their major tax reform (GST implementation) has negatively affected the Indian economy in its initial stage after which it covers up rapidly with a time period on an average of two and half months. The findings of the study are in contrast to the anticipation of the market that the adoption of the GST will benefit the various sectors of the Indian economy by reducing the tax burden on consumers and producers by simplifying the taxation system and abolishing the cascading effect of taxation as prevalent under the value-added taxation system. However, the elimination of tax on already paid taxes reduced the prices of goods and services in India and improved the standard of living by increasing the purchasing power of the consumers, but the contemporaneous response of GST came as shock for various sectors of the Indian economy which takes some time to nullify the impact of GST. The impact of policy reform on a particular sector also depends on the extent to which the government takes a particular sector of an economy in confidence before its policy announcement through advertisement and awareness programs. But the result shows that the awareness

programs sponsored by the government and other groups do not yield a meaningful result which shows the non-readiness of various sectors of the Indian economy for the adoption of GST in India.

8. Managerial and Policy Implications

The current study has focused on examining the impact of the implementation of GST on the Indian economy by categorizing it into different sectors. India is being a developing economy whose economic conditions are not stable and it reacts very quickly and sensitively to any small or big market news. This study may act as a guide for the government and policymakers in the announcement and development of macroeconomic policies in near future. The results suggest that the awareness programs arranged by the government for the GST reforms in India do not yield any meaningful results and are unable to take different sectors of the Indian economy under confidence. Moreover, this study attempts to extend the previous literature by examining whether the announcement of macroeconomic news of tax law changes impacts the Indian economy. A future study can be conducted by including more sectors of the Indian economy. Similarly, there is a vast scope for analyzing the effect of GST at the international level by taking this study as a base. Moreover, this study may be used as a foundation for future studies in investigating the effect of other macroeconomic news announcements and market shocks generated by recession or by natural causes i.e. covid-19 and market crashes like 2007 on the stock market volatility.

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Alexa Buy It for Me: Exploring the Impact of Voice Assistants on Consumer Purchase Intention

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Anthropomorphism; Behavioural intention, Perceived usefulness, Perceived ease of use; Voice assistants

JEL Classification
M30, M31, M39, O30

Abstract: Artificial intelligence has the power to influence and transform consumer behaviour as well as marketing tactics. Although billions of people use smart devices daily, consumer intention to use Voice Assistants (VA) like Google Assistant, Siri, and Alexa still needs to be higher. The study explores the role of anthropomorphism in impacting behavioural intention to use VA through two intervening variables, i.e., perceived usefulness and perceived ease of use. In addition, the research explores the effect of behavioural intention on purchase intention. Data from 648 VA users in India was gathered using purposive sampling. The findings showed that anthropomorphism positively and moderately influences perceived usefulness and perceived ease of use. In addition, the two intervening variables were found to have a significantly positive impact on behavioural intention. Further, consumers' behavioural intention determines their intention to purchase using VA in the future. Based on these findings, the study concludes with the theoretical and managerial implications.

1. Introduction

Research in Business and Marketing reveals that today's consumers are driven by the need for time-saving, convenience and enjoyment (Morganosky, 1986; Roy *et al.*, 2017). The analysis by PwC (2018) exposes that approximately 93% of consumers are delighted with automatic VA features or facilities. VA serve this need as they enable consumers to have a quick hands-free experience and perform tasks repetitively without getting annoyed (Pitardi and Marriott, 2021; Sundar, 2020). Moreover, VA save consumers from the affective and cognitive fatigue entailed in decision-making (Yoon *et al.*, 2013; Hoyer *et al.*, 2020). Consumers are getting dependent on VA, especially for daily routine and repetitive tasks like making a call, setting reminders and alarms, listening to songs, and asking for weather forecasts. Moreover, checking bank account balances, making payments, and using transaction history as a key search indication are all components of VA's job as a customer engagement tool.

Besides, VA also helps consumers to interact with brands. As Klaus and Zaichkowsky (2021) remarked, in the future, brands will similarly talk with us as Alexa and Google Assistant interact in the

present. It is being researched that unique congenial voices can challenge visual online shopping and help differentiate a brand, like logos, taglines, and colours. It is even argued that users shall value recommendations by VA more in the future than the brands (Klaus & Zaichkowsky, 2020). Thus, VA is becoming the new touchpoint for brands to interact with consumers (Smith, 2018). The analysis by PwC (2018) says that approximately 93% of consumers are highly satisfied with automatic VA features. Google (2019) mentions that India has 400 million active internet users and is witnessing a 270% Year-on-Year (YoY) growth in voice searches, making it mainstream. In the crowd of digital requirements, VA found a highly effective and exceptional remedy that offers personalized recommendations, by which marketers make more effective marketing strategies like cross-selling and up-selling through voice (Rzepka *et al.*, 2022). Yet consumer intention to purchase using VA needs exploration and understanding.

The necessity to understand VA as a major interaction tool is a significant future research area (Klaus and Zaichkowsky, 2021; Verhoef *et al.*, 2017). Customer-technology interface focusing on VA is considered a research priority topic as per Marketing Science Institute (MSI) 2020-2022. In the same vein, scholars, including Rzepka and Berger (2018) and Poushneh (2021), have advised the need to explore the personality traits of VA. Scholars, namely Hermann (2021), Moriuchi (2019) and Sundar (2020), underline the need to understand the outcomes of artificially intelligent technology. Fernandes and Oliveira (2021) have specified the need to understand the VA acceptance from the current usage perspective. This study will contribute to the VA literature and provide new insights by (i) exploring the role of Anthropomorphism (ANTHRO) as a driver of Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (ii) shedding light on the impact of PU and PEOU on Behavioural Intention (iii) measuring the impact of the current Behavioural Intention on Purchase Intention.

2. Literature Review

2.1. AI (Artificial Intelligence) to Respond to the Human Voice

With the aid of Artificial Intelligence (AI), the global population can now efficiently use Amazon's Alexa, Google's Google Assistant and Apple's Siri. As per this evidence, it can be stated that such advanced technology (AI) effectively gained prominence with the rise of VAs. Consumers with special needs use machine learning and AI including speech recognition in case of taking the privilege of VA (Agrwal *et al.*, 2023; Sherif, 2018). Consumers use voice commands to interpret and receive directives. This is solid evidence in the real-time world that voice AI can respond and interact with human questions based on natural languages.

In this present modern era, natural language processing has made it possible for consumers to communicate with computers by using their languages and it helps in scaling other language-oriented tasks. This means the natural language process is highly conjugated in VA (AI-specialised) for reading books, interpreting data or information and hearing speech (Cherif and Lemoine, 2019). People regularly use natural language processing technology to check word spelling.

2.2. VA and Voice Recognition Technology

VA carry out predetermined activities by reacting to commands, utilizing the information they collect and communicating with consumers in a human-like voice. For VA to function, internet-connected

hardware (e.g., Amazon Echo Dot, Google Home, etc.) or software (e.g., Google Assistant and Apple's Siri) is required. It mainly consists of VA provided by the major voice ecosystem participants, such as Amazon's Alexa, Apple's Siri, and Google's Google Assistant (Koetsier, 2021).

It has been noted that voice recognition technology is used effectively in VA devices and applications, which is crucial for making the VA facility for consumers user-friendly and simple to use when needed. According to the study's conclusions by PwC (2018), speech recognition technology, which can decipher human voice, is thought to be a software application or integrated hardware component. The world's population currently uses speech recognition technology since it allows users to perform various tasks by speaking directly to Google Home and Amazon Alexa. According to this information, voice recognition technology has been praised for its ability to accurately convert human speech into printed words due to its advanced algorithms.

2.3. Consumers Interest in Purchasing High-tech Products

Nowadays, people tend to find ways to get their demands fulfilled at their doorsteps. People often look forward to using shortcuts and saving time and cost daily. VAs have become an essential tool in human life due to their advanced features and easy use. In the crowd of digital requirements, VA found a highly effective and exceptional remedy that offers personalized recommendations, by which marketers make more effective marketing strategies like cross-selling and up-selling through voice (Rzepka *et al.*, 2022). The young population is the main target for tech companies, as the adult generation deals with confusion about using cutting-edge technology and usually carries on traditionally followed habits like typing and searching (Rzepka *et al.*, 2022). However, high-tech products (VA) are leading the race as they are highly cost effective and readily available at our doorsteps. For instance, tech giants have started the facility of VAs in mobile phones and smart speakers (e.g., Google Home and Amazon Alexa).

2.4. Kano Model

Kano model is essential to assess the impact of products and service features based on consumer satisfaction. This means the Kano model helps provide a detailed account based on consumer satisfaction and helps brands customize products and services accordingly. Key features of the Kano model are performance features, excitement features, basic features and downloads to prioritize the road map to consumers. As per this understanding, the Kano model is instrumental in supporting producer discussion and specification through better development of consumer understanding. *[Referred to appendix: 1]*

2.5. Improvements in AI technology are Increasing the Compatibility and Accessibility of VA

Recent changes in information and communication technology are enabling new opportunities for companies to improve the quality of smart devices. For example, Amazon has increased their Echo Dot device's compatibility, forcing the organization to introduce a switch to stop the information-sharing phase. Recent problems associated with data mismanagement forced Amazon to introduce the feature of stopping the information-sharing process from incorporating a sustainable environment

for their consumers. Pawlascyzyk *et al.* (2019) suggested that the instant disabling of the recording feature associated with the Amazon Echo Dot creates a suitable environment for consumers to avail the products. Amazon cloud technology is included in the safe management of VA devices (Pawlascyzyk *et al.*, 2019). The changes in the network artefacts are enabling Amazon to make positive changes in their device architecture as well .

3. Hypotheses Development

3.1. Anthropomorphism (ANTHRO)

ANTHRO assigns human or individual traits to objects, people, animals, events, or even abstract notions that are not human (Epley *et al.*, 2008). The fundamental idea behind ANTHRO is attributing human traits to inanimate objects. Consumers develop attachments to anthropomorphic figures early on, such as Mickey Mouse and in the modern world, to smart devices. It is not surprising that market analysts believe that these features of non-human creatures resembling humans drive technology-oriented interactions (Wirtz *et al.*, 2018). Experts in human-computer interaction, such as Nass and Moon (2000), Nass *et al.* (1997), and Nass *et al.* (1994), have demonstrated the potency of humanistic cues in speech. Consumers' increased usage intention is a result of their perception of technology's expressive voice as being more socially savvy (Heerink *et al.*, 2008). According to Klaus and Zaichowsky (2021), VA resemble a real discussion and help consumers transition from the conventional visual experience to a complete voice-based experience. In other words, the humanness that VA portrays impacts cognition. Accordingly, the study hypothesizes that:

H1: ANTHRO positively impacts Perceived Usefulness (PU).

H2: ANTHRO positively impacts Perceived Ease of Use (PEOU).

3.2. Perceived Usefulness (PU)

PU is one of the fundamental determinants of behavioural intention to use technology (Davis, 1989). AI technology's perceived utility significantly impacts consumer behavioural intention towards the latest technological advancements (Gursoy *et al.*, 2019; Lin *et al.*, 2019). Consumers can control home automation smart devices like televisions and lights, play music and podcasts, and s*et al*arms and reminders (Ammari *et al.*, 2019; Hoy, 2018). Given the ability mentioned above of VA to be useful, the following hypothesis is proposed:

H3: PU has a positive impact on Behavioural Intention.

3.3. Perceived Ease of Use (PEOU)

PEOU measures how much an individual believes a specific technology demands little physical or mental effort (Davis, 1989). The effort necessary to utilize a specific technology has also been described by researchers using a related term called effort expectancy (Venkatesh *et al.*, 2003). Researchers in the context of smartphones (Belanche *et al.*, 2019; Go *et al.*, 2020) and mobile payment have investigated this construct as a fundamental driver of technology acceptance and usage behaviour (Patil *et al.*, 2020). Based on the above discussion, in the context of VA, the study hypothesizes that:

H4: PEOU has a positive impact on Behavioural Intention.

3.4. Purchase Intention

Purchase Intention depicts consumers' likelihood or willingness to purchase a product or avail service (Abdul and Soundararajan, 2022; Banerjee and Padhi, 2023). In the past, VA were mainly used for searching for the meaning of words, but presently VA signs have been put near the phrase search on Flipkart, Amazon, and other food chains. Nowadays, consumers want to discover means of meeting their needs at their doorsteps. Consumers frequently look forward to using shortcuts every day to save time and money. VA has emerged as a vital tool in modern living because of its cutting-edge functionality and simplicity of use. Consumers use VA technology by just speaking near the VA, thereby streamlining and expediting daily tasks. Based on the above discussion, the study hypothesizes that:

H5: Behavioural Intention has a positive impact on Purchase Intention.

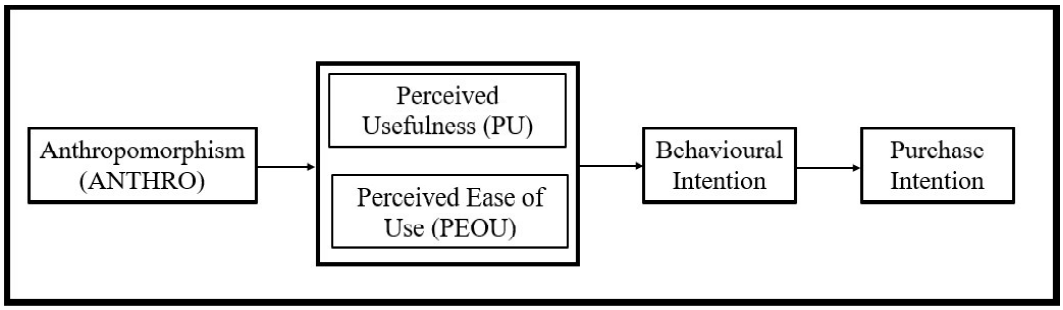

Figure 1: Research Model

4. Methodology

4.1. Questionnaire and Measures

The questionnaire has 28 items on a five-point Likert scale ranging from 1 to 5, where 1 represents strongly disagree and 5 means strongly agree. Table 1 shows the items for each construct. For measuring ANTHRO, nine items were adopted from Lu *et al.* (2019) and Moriuchi (2020). Constructs PU and PEOU were assessed using six-item scales adapted from Davis (1989). A three-item scale was adopted for Behavioural Intention (Venkatesh *et al.*, 2012). To measure Purchase Intention, three items were adapted from Lu *et al.* (2010). The construct scales were modified to fit into the context of the study.

4.2. Data Collection

An online questionnaire using Google Forms was used to collect the data from individuals who reside in India and currently use VA. Social media was used to contact VA users aged 18 years and above. Scholars like Balakrishnan and Dwivedi (2021) & Dogra and Kaushal (2021) employ this well-accepted online data-gathering approach in marketing research. With more than 1700 message receivers, the study discovered 677 people who freely completed the questionnaire. Finally, 648 valid replies were

taken into account for the study sample. Based on the boxplot, 29 responses were detected as outliers. Table 2 shows the demographic profile of the respondents.

The responses indicated that consumers' usage of VA was concentrated on four brands, including Google's Google Assistant (78.3%), Apple's Siri (10.3%), Amazon's Alexa (8.9%) and Samsung's Bixby (2.5%). The sample characteristics are shown in Table 3.

Table 1: Scale Items

Construct	*Indicators*	*Items*
Anthropomorphism (ANTHRO) (Lu *et al.*, 2019; Moriuchi, 2020)	ANTHRO1	VA has a mind of its own.
	ANTHRO2	VA is aware and responsive to the surroundings.
	ANTHRO3	VA has free will.
	ANTHRO4	VA is sociable.
	ANTHRO5	VA experiences emotions.
	ANTHRO6	When I interact with VA, it feels like someone is in the room.
	ANTHRO7	VA seems like a real person to me.
	ANTHRO8	I feel a sense of human warmth in the interaction with VA.
	ANTHRO9	I feel a sense of human contact in the interaction with VA.
Perceived Usefulness (PU) (Davis, 1989)	PU1	VA enables me to accomplish tasks more quickly.
	PU2	Using VA increases my productivity.
	PU3	VA enhances my overall (work/learning/life) performance.
	PU4	VA enhances my overall (work/learning/ life) effectiveness.
	PU5	Using VA to complete tasks makes my life easier.
	PU6	Overall, I find VA useful.
Perceived Ease of Use (PEOU) (Davis, 1989)	PEOU1	VA is easy to use.
	PEOU2	Learning to use VA is easy.
	PEOU3	My interaction with the VA is clear and understandable.
	PEOU4	VA is flexible to use.
	PEOU5	I find it easy to get the VA to do what I want.
	PEOU6	It is easy for me to become skilful at using VA.
Behavioural Intention (Venkatesh *et al.*, 2012)	BI1	I intend to continue using VA in the future.
	BI2	I plan to use VA frequently.
	BI3	I will always try to use VA in my daily life.
Purchase Intention (Lu *et al.*, 2010)	PI1	I would consider purchasing using VA in the future.
	PI2	I will purchase using VA in the future.
	PI3	I intend to purchase using VA.

Table 2: Demographic Profile of Respondents (sample size = 648)

Variables	*Classification*	*Frequency*	*Percentage (%)*
Gender	Male	332	51.2
	Female	315	48.4
	Other	1	0.4
Year of Birth	1946-1964	25	3.9
	1965-1980	37	5.7
	1981-1996	177	27.4
	1997-2004	409	63
Qualification	High School (12^{th} pass)	168	26
	Bachelor's degree	193	29.9
	Master's degree	215	33.1
	M.Phil	13	2
	Ph.D or higher	71	11
	Other	13	2

Source: Author's Own Compilation

5. Data Analysis and Results

5.1. Common Method Bias (CMB) Test

Harman's single-factor test was used to determine whether CMB would impact our findings by determining whether a single factor would emerge from the factor analysis and explain most of the variance (Podsakoff *et al.*, 2003). The results revealed that the first significant factor only explained 43% of the overall variation, which is below the suggested cutoff point (<50%). The current study also tested CMB using the Common Latent Factor (CLF). The two models' regression weight differences with and without CLF were within the 0.2 criteria. Constructs are free of CMB, according to the findings of the CLF estimate and the Harman one-factor model.

5.2. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA)

Using SPSS 26, EFA was used to determine the factors influencing each component, and CFA was used to determine the model's fitness. EFA forms two dimensions of ANTHRO: humanoid (items 1 to 5) and parasocial relationship (items 6 to 9). The fit indices of each construct in Table 4 show that the model reflects a good fit.

5.3. Reliability and Validity

Table 5 shows each construct's values of Cronbach alpha, Average Variance Extracted (AVE), and Composite Reliability (CR). The Cronbach alpha and CR values are greater than 0.70 (Hair, 1997; Hair

Table 3: Sample Characteristics (Sample Size = 648)

Variables	*Description*	*Frequency*	*Percentage (%)*
Device	Mobile Phone	591	91.2
	Laptop	7	1.08
	Smart Speaker	39	6.01
	Television	5	0.8
	Others	6	0.9
Language	English only	285	43.9
	Hindi only	16	2.5
	English and Hindi	345	53.2
	Others (Bengali, Tamil, Urdu)	2	0.3
Experience	Less than 6 months	92	14.2
	6 months-1 year	78	12.04
	1-2 years	190	29.3
	2-3 years	120	18.5
	3-4 years	75	11.6
	4-5 years	61	9.4
	More than 6 years	32	4.9
Habit	More than 3 times a day	157	24.2
	2-3 times a day	166	25.6
	Once a day	91	14.04
	2-3 times a week	74	11.4
	Once a week or less frequently	160	24.7
Gender of VA	Male	562	86.8
	Female	86	13.2

Source: Author's Own Compilation

Table 4: Model Fit Indices of Each Construct

	CMIN/DF	*GFI*	*AGFI*	*CFI*	*RMR*	*RMSEA*
ANTHRO	2.618	0.958	0.918	0.98	0.76	0.076
PU	2.527	0.977	0.941	0.989	0.022	0.074
PEOU	1.223	0.990	0.969	0.998	0.013	0.028
Behavioural Intention	1.962	0.989	0.958	0.995	0.14	0.059
Purchase Intention	1.698	0.990	0.963	0.998	0.08	0.048

Note: ANTHRO=Anthropomorphism, PU=Perceived Usefulness, PEOU=Perceived Ease of Use

Source: Author's Own Compilation

et al., 2012), and AVE is higher than 0.50 (Fornell & Larcker, 1981), indicating a reliable measurement model. Table 6 represents the inter-correlation values between each construct, with the squared root of AVE values represented in the diagonals. The values show that the discriminant validity of the model lies in the acceptable range.

Table 5: Cronbach Alpha, AVE and CR

Construct	*Factors*	*Cronbach Alpha*	*AVE*	*CR*
ANTHRO	Humanoid	0.886	0.613	0.888
	Parasocial Relationship	0.933	0.763	0.928
		0.924	0.678	0.95
PU		0.914	0.637	0.913
PEOU		0.886	0.545	0.878
Behavioural Intention		0.894	0.624	0.892
Purchase Intention		0.901	0.654	0.932

Note: ANTHRO=Anthropomorphism, PU=Perceived Usefulness, PEOU=Perceived Ease of Use

Source: Author's Own Compilation

Table 6: Discriminant Validity

	Anthro	*PU*	*PEOU*	*Behavioural Intention*	*Purchase Intention*
ANTHRO	.824				
PU	.503**	.799			
PEOU	.352**	.699**	.739		
Behavioural Intention	.439**	.439**	.680**	.79	
Purchase Intention	.350**	.421**	.662**	.594**	.78

Note: The squared root of AVE's is presented in bold and italic format in the diagonal for each construct. **p<0.5. ANTHRO=Anthropomorphism, PU=Perceived Usefulness, PEOU=Perceived Ease of Use

Source: Author's Own Compilation

5.4. Hypothesis Testing: Using Structural Equation Modelling (SEM)

The model fit indicators for each hypothesis test are shown in Table 5. SEM is done using IBM AMOS Version 23. The study provides insights into the role of ANTHRO in impacting the behavioural intention towards VA. The findings show that the first dimension of ANTHRO, i.e., humanoid (SRW= 0.182), has a low influence, and the other dimension, i.e., parasocial relationship (SRW=0.419), has a moderate effect on consumers' perception of VA usefulness. Hence, ANTHRO facilitates PU, supporting H1. In addition, the results show that ANTHRO has a positive and significant impact on

PEOU, supporting H2. The dimensions of ANTHRO, humanoid (SRW=.179) and parasocial relationship (SRW=.255) have a low influence on PEOU. Moreover, the results prove that both PU (SRW=0.681) and PEOU (SRW=.688) facilitate Behavioural Intention, supporting H3 and H4. Finally, the analysis revealed that consumers' current Behavioural Intention significantly impacts Purchase Intention (SRW=0.691), supporting H5. Hence, all hypotheses are supported.

Table 7: Hypotheses Testing

Hypotheses	*Relationship*	*CMIN/DF*	*GFI*	*AGFI*	*CFI*	*RMR*	*RMSEA*
H1	ANTHRO > PU	2.503	.909	.872	.959	.072	.074
H2	ANTHRO > PEOU	2.642	.911	.872	.951	.084	.077
H3	PU > Behavioural Intention	2.356	.936	.901	.972	.035	.070
H4	PEOU > Behavioural Intention	2.522	.941	.906	.965	.030	.074
H5	Behavioural Intention > Purchase Intention	2.452	.938	.902	.970	.032	.071

Note: ANTHRO=Anthropomorphism, PU=Perceived Usefulness, PEOU=Perceived Ease of Use
Source: Author's Own Compilation

The study also performs mediation analysis to explore the mediating effect of Behavioural Intention between PU and PEOU, and purchase intention. Preacher and Hayes (2004) methodology has been used to check the mediating effect Behavioural Intention between PU and Purchase Intention. The result revealed that the indirect effect of PU on Purchase Intention through Behavioural Intention is significant ($\beta = .157$, $p < 0.05$). In addition, the non-zero values in lower and upper bound limits at a 95% confidence interval also confirm the same (see Table 5). Further, the Sobel Test (Sobel, 1982) also supported the significance of the indirect effect of PU on Purchase Intention through Behavioural Intention (Sobel statistics = 2.42, $p < 0.05$).

In the same vein, the analysis revealed that the indirect effect of PEOU on purchase intention through Behavioural Intention is also significant ($\beta = .145$, $p < 0.05$). Further, the non-zero values in the lower and upper bound limits also support the same (Table 8). The values of Sobel statistics are significant for the indirect effect of PEOU and Purchase Intention through Behavioural Intention (Sobel statistics = 2.18, $p < 0.05$).

Table 8: Mediation Analysis

Hypothesis	*Direct beta without the mediator*	*Direct beta with the mediator*	*Indirect effect*	*LL95-UL95*	*Mediation type*
PU→BI→PI	.313**	.216	.157**	.064-.300	Full mediation
PEOU→BI→PI	.355**	.190	.145*	.041-.284	Full mediation

Note: PU=Perceived Usefulness, BI=Behavioural Intention, PI=Purchase Intention
Source: Author's Own Compilation

6. Conclusion and Implications

VA is revolutionizing consumers' interaction with smart objects. Although VA have been accepted by consumers, our understanding of consumer behaviour towards this anthropomorphic technology remains somewhat limited. The objective of the study is to examine the role of ANTHRO in Behavioural Intention. In addition, to understand the effect of intention to use VA on Purchase Intention.

The study has both theoretical and practical implications. The study contributes to the literature on VA related consumer behaviour, which is still in its infancy stage and largely theoretical. The findings offer a perspective regarding consumers' understanding of the role of human elements of technology (ANTHRO). The study establishes ANTHRO (humanoid and parasocial relationship) as a bi-dimensional construct, an important antecedent of PU and PEOU. Moreover, the role of ANTHRO in the context of Indian VA users has not been explored much. The results show that the voice cue of VA is equally essential in impacting consumers' perception of VA usefulness and ease of use. In addition, the study's findings highlight the equivalent weight given to PU and PEOU in Behavioural Intention to use VA, which is a crucial finding for marketers and technology developers. Therefore, striking a balance between creating a relatable, human-like interaction and maintaining an easy and clear understanding of the assistant's capabilities is crucial. For instance, a better understanding of the different tones and slang of consumers by the VA would aid in decreasing the consumers' frustration caused by the repetition of voice commands. In addition, there should be an effort to personalize the human-VA interaction process; for example, the VA should have a name, age, and general demeanour to provide consumers with an amiable feeling.

Additionally, marketers need to consistently work to inform current and potential users of VA of the countless advantages of doing so. Hence, if a service provider aims to increase consumers' usage intention towards VA, including anthropomorphic traits might be an effective solution to give the key participants in the speech ecosystem a competitive edge. Balancing human-like qualities with clear communication of the assistant's capabilities is key to creating a successful and user-friendly interaction.

7. Future Research Directions

The study makes contributions to research VA-related consumer behaviour. However, the paper has certain shortcomings that future researchers may address. Firstly, the study obtained data from respondents located in India. A comparative analysis of data from developed and developing countries should be done to understand the varying degrees of acceptance among individuals of different cultural backgrounds. Academicians can also make comparisons between metropolitan with non-metropolitan. Secondly, the model can be tested in different industries (e.g., education, banking and finance). Third, potential moderators, including demographic, age, gender, education, income, and occupation, can be considered. Behavioural moderating variables like habit, experience, and type of device can also be used to understand behavioural intention. Fourth, future research should also work towards developing a broader framework by identifying more potential drivers like the brand of VA, etc. Lastly, research to explore the impact of VA gender on the attitude and degree of acceptance should also be conducted.

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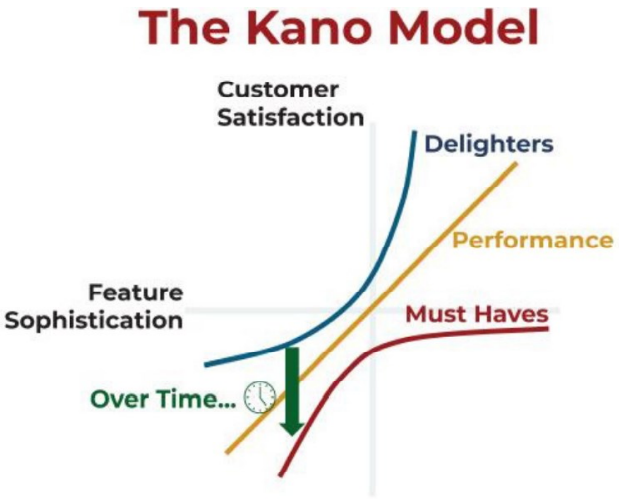
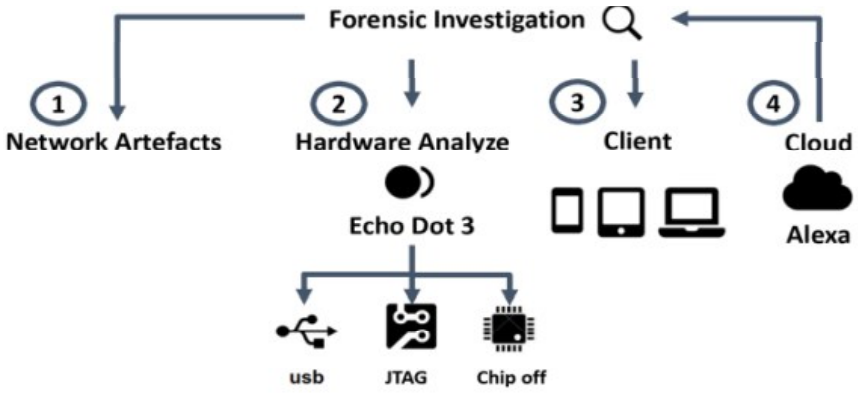
Appendix 1: Kano Model

Source: https://www.prodify.group/blog/a-product-managers-guide-to-the-kano-model



Appendix 2: Significant Factors Associated with Amazon Alexa



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Effect of Demographic Variables on University Teachers' Engagement Level in Odisha: An Empirical Examination

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JEL Classification

J28, L31, H52, M37

Abstract: Recently employee engagement has gained popularity because of its ability to achieve better productivity, utmost satisfaction, and maximum employee contribution for business success and personal wellbeing. Teachers are the key to educational institutions who influence and create education as a powerful instrument for the social, economic, and cultural advancement of a nation. The present study aims to determine university teachers' engagement level and the effect of demographic variables on it. Data has been collected from 292 full-time teachers engaged in four sample universities. The result reveals age, educational qualification, designation, and experience have a significant effect on teachers' engagement level. But gender, marital status, and stream have no significant effect on it. This research has added information to the literature on university teachers' engagement level in Odisha as well as other states of India and other nations.

1. Introduction

All over the world, interest in employee engagement (EE) has emerged in recent periods, and meticulous research is still going on in this area. To deal with the unprecedented challenges in business, such as frequent changes in technology and complex work processes, it requires the discretionary efforts of employees in the form of their engagement. EE has gained popularity because of its ability to achieve better productivity, utmost satisfaction, and maximum employee contribution to achieve business success (Swathi, 2013). According to (W. B. Schaufeli et al., 2002) engagement refers to a positive work-related attitude of employees which includes three major characteristics: vigor, dedication, and absorption. It is not confined to a particular condition rather it is more continuous and present everywhere in affective-cognitive form. Also, it does not focus on any specific object, event, individual, or behavior (Schaueli

and Bakker, 2004). Engaged employees are absorbed in their work, put their heart into it, and become a reason for bringing competitive advantage to the organization (Katzenbach, 2000). In educational institutions, teachers are the key employees and influence the performance of an institution. They also fabricate education as a powerful instrument for the social, economic, and cultural advancement of a nation (John and Prabhakaran, 2019). An engaged teacher transfers his attitude, behavior, and personality to the students and becomes a role model for them (Rothmann, 2016). It is a psychological concept that exerts a teacher's emotional and motivational experience during classroom performance. (Thirolf, 2017) has stated that teachers' engagement (TE) increases when a teacher enjoys educating students, preserving and advancing knowledge, and fulfilling institutional and societal goals.

Most of the studies on TE are conducted in Western countries, whereas in the Indian context, their number is scanty (Barman and Ray, 2011); (Livingston, 2011); and (Selmer and Lauring, 2015). This study has focused on measuring the level of TE and the effect of various demographic variables on university TE in Odisha. To fulfill the objectives of this study, four sample universities have been selected from the state of Odisha. This study has been carried out by adopting the following steps: First, an extensive literature review has been carried out to understand and conceptualize TE. Second, a model questionnaire has been taken from the literature and data has been collected from the respondents to empirically test the hypotheses. Third, the data has been analyzed, and the results are discussed by applying different statistical tools. Fourth, in this stage, conclusions are made and the further scopes of the study are defined.

2. Literature Review

2.1. Employee Engagement

The concept of EE has been interpreted distinctively by various researchers, scholars, and practitioners. According to (Kahn, 1990) in the EE process, a person is involved and expresses "physically, cognitively, and emotionally" at the time of work. It is the zeal, enthusiasm, passion, dedication, commitment, involvement, focused effort, and energy of individuals towards their work and organization (Harter *et al.*, 2003). When employees have such a relationship with their work, it is called work engagement, when they have a similar relationship with their organization it is called employee engagement (Rout, 2017). An engaged person is always ready to contribute more than the job requirement by exerting extra time, energy, or brain power (Rama Devi, 2009). According to (Schaufeli *et al.*, 2002) EE is a continuous motivational state that consists of three major characteristics: vigor, dedication, and absorption. Vigor means a higher level of energy and mental capacity that helps an individual to exert inquisitiveness in work and tackle difficulties without any fear of failure. In dedication, an individual is strongly involved in the work in a manner that develops enthusiasm, pride, inspiration, and challenge. In absorption, the individual becomes more focused on work and happily involved beyond the working hour. Sometimes such behavior does not let people to detach them from their work easily. Therefore, work engagement refers to furnish a high level of energy and strong identification in work. The Conference Board of the USA (2006) has described "it as a heightened emotional connection an employee possesses with the organization that influences him to employ greater discretionary effort to

his work and see themselves as able to deal completely with their job demand" (Maslach and Leiter, 2008).

2.2. Teachers Engagement (TE)

TE is the continuous attention, enjoyment, and enthusiasm that a faculty member gets from all of his teaching-related activities. By carrying out those activities, teachers find purpose and a sense of attachment to their personal values and talents. Even in difficult situations, the engaged teacher uses his skills, knowledge, and experience productivity in performing his duties (Livingston, 2011). It is the actions and behaviors that are undertaken by both faculty members and institutions to create a positive environment for personal growth. TE grows when institutions provide opportunities for teachers to connect, interact, and learn from each other. They take advantage of such chances to build stronger and fulfilling relationships with others which helps them to stay engaged (Thirolf, 2017). (Sandhu et al., 2018) have identified four factors: "work environment, emotional satiety, compensation system and career progression" leads to improve TE. These factors lead to competitive advantage and solve problems associated with teachers' disengagement. Further, TE is contingent on the amount of freedom they get to do what they want and perform well. This largely depends on fair treatment, adequate compensation, and a bond between the institution and its students (John and Prabhakaran, 2019).

2.3. TE in Higher Education

Globalization has forced higher educational institutes and universities to maintain their educational standards and augment innovation, skill, resilience, and research mindset to meet global requirements (Tripathi and Bhavsar, 2022). In India, higher education is a three-tier system (University Grant Commission). At the top level, there are institutions like the central university, deemed-to-be universities, and institutes of national importance. A central act was passed for the establishment of these three types of universities. The top-level institutions are flagship universities, which receive huge government funding, provide a wide variety of subjects, and primarily emphasize on research. The second level includes those higher education institutes formulated due to the effectiveness of either provincial or state legislative acts in any state territory. These are some teaching-oriented institutions, and the primary objective of these institutions is to provide teaching. Except for teaching, these institutions also focus on research related to locally relevant areas. Third, the establishment of private universities is governed by either a Central or State Act and sponsored by a company registered under "Section 25 of the Indian Company Act, 1956", or a "Societies Registration Act, 1860" (UGC, 2012). Universities are sources of human resources and are primarily concerned with educating students. Teachers are the sole element of the total educational system, holding a variety of responsibilities. The performance of universities depends on their engaged teachers and their level of work involvement. Cognitively engaged teachers are very attentive in their work, and their work performance is influenced by organizational climate and morale (Baisya and Panda, 2022). Therefore, it is essential to understand their attitude and behavior, as they are essential for the fortification of the higher education system in our society (Tsui and Cheng, 1999; John and Prabhakaran, 2019).

From the above literature, it is inferred that EE is an emerging concept. Many studies have been conducted on EE in varied organizations, including educational institutions. These studies include student engagement, TE, engagement of non-academic staff, etc. However, studies on teachers' engagement level at the university are very limited in non-western countries, particularly in India. Teachers, being the backbone of any country, require more attention, and their engagement is a matter of greater concern as well. This gap instigated the formulation of the following objectives to carry out this paper:

3. Objectives and Hypotheses of the Study

Objectives of this study are:

- To measure the effect of demographic variables on teacher engagement level in state universities in Odisha.
- To measure the effect of demographic variables on the vigor of teachers in state universities in Odisha.
- To measure the effect of demographic variables on the dedication of teachers in state universities in Odisha.
- To measure the effect of demographic variables on the absorption of teachers in state universities in Odisha.

Hypotheses of this study are:

- There is no significant difference in the effect of demographic variables on the vigor of teachers in state universities in Odisha.
- There is no significant difference in the effect of demographic variables on the dedication of teachers in state universities in Odisha.
- There is no significant difference in the effect of demographic variables on the absorption of teachers in state universities in Odisha.

Demographic variables include: gender, age, marital status, qualification, stream, experience, and designation.

4. Methodology

This research has used proportionate stratified sampling techniques for selecting samples from the population. This is a sampling technique where the population, as well as the sample are stratified into subpopulations and subsamples based on population characteristics known as stratification variables. In this sampling technique, stratification variables are correlated with dependent variables, which maximizes homogeneity within strata and heterogeneity across strata. After stratification, the drawn sampling units are independent across strata (*www.ipsos.com*). The total population in this study is 1083. For sample size determination, (Yamane, 1967) has been used.

(Schaufeli et al., 2002) have developed a scale on work engagement to measure the engagement level of people at work. The three dimensions of the questionnaire include 17 items having a scale range between '0' (never) to '6' (always) for rating items. Out of 17 items, vigor (06), dedication (05),

and absorption (06) are included. (Schaufeli and Salanova, 2006) applied this scale to measure engagement in different occupations across countries like: "Australia, Belgium, Canada, Finland, France, Germany, The Netherlands, Norway, South Africa, and Spain". The studied occupational groups are: "social work, blue-collar, health care, white-collar (profit and nonprofit), teaching, police, and management" (Schaufeli and Bakker, 2002). This scale is used to measure the level of engagement of university teachers in the state of Odisha.

The total reliability of the instrument, i.e., Cronbach's alpha value of.876, which falls in the range of 0.80 to 0.95, indicates very good reliability (Zikmund *et al.*, 2013). The reliability values of identified constructs are 0.736, 0.712, and 0.764, respectively, and indicate a good degree of reliability. Hence, the instrument is fit for use for collecting data from the observations in this study.

5. Result & Discussion

In the current study, for data analysis purposes, SPSS version 23 has been used. Percentage statistics and ANOVA are used for testing the hypotheses.

Table 1 illustrates the demographic profile of all the respondents undertaken in this study. Demographic profile includes: gender, age, marital status, qualification, stream, experience, and designation. Based on gender, most respondents are male, totaling 151 (51.7%), and the remaining are female respondents, totaling 141 (48.3%) at the university. The maximum number of respondents, i.e., 110 (37.7%), belong to the 26-35 age group, indicating most of the respondents are youth, followed by only 19 (6.5%) from the age group 56 and above. However, only 5 (1.7%) belong to the below-26 age group, respectively. The table shows that 225 (77.1%) are married respondents and 67 (22.9%) are bachelors. This table also depicts that the highest 194 (66.4%) respondents have Ph.D. degree, and the lowest 17 (5.8%) respondents have M.Phil. degree as their qualification. This is further followed by 62 respondents (21.2%) holding P.G. degree and 19 (6.5%) having a PDF at selected universities.

Table 1: Distribution of Respondents According to Demographic Variables

Sl. No.	*Items*	*Categories*	*University*	
			Frequency	*Percentage*
1.	Gender	Male	151	51.7
		Female	141	48.3
2.	Age	Below26	5	1.7
		26-35	110	37.7
		36-45	99	33.9
		46-55	59	20.2
		56 and Above	19	6.5
3.	Marital Status	Bachelor	67	22.9
		Married	225	77.1

contd. table 1

Sl. No.	*Items*	*Categories*	*University*	
			Frequency	*Percentage*
4.	Qualification	P.G	62	21.2
		M. Phil	17	5.8
		Ph. D	194	66.4
		PDF	19	6.5
5.	Stream	Science	83	28.4
		Social Science	28	9.6
		Commerce & Mgmt.	77	26.4
		Engineering	104	35.6
6.	Experience	Below 10	131	44.9
		10-20	114	39.0
		20-30	47	16.1
7	Designation	Lecturer	50	17.1
		Asst. Prof.	149	51.0
		Associate Prof.	56	19.2
		Prof.	37	12.7

Source: Authors' Own Compilation

Stream-wise, out of the total respondents, 104 (35.6%) belong to engineering, and 28 (9.6%) are from social science at the university. Of the remaining respondents, 83 (28.4%) are science teachers and 77 (26.4%) are commerce and management teachers. The table also shows that 131 (44.9%) of the respondents have less than 10 years of experience, and only 47 (16.1%) have 20-30 years of experience at their respective universities. It represents the fact that most of the university teachers are fresher and at the beginning of their careers. Designation-wise, 149 respondents, which represent more than half of the total respondents (51.0%), are assistant professors. It is followed by 56 (19.2%) associate professors, 50 (17.1%) lecturers, and only 37 (12.7%) professors.

Table 2: Mean and Standard Deviation of 17 items of the Level of Engagement

Items	*N*		*Mean*	*Std.*
	Valid	*Missing*		*Deviation*
At my work, I feel bursting with energy	292	0	5.12	1.155
I find the work that I do full of meaning and purpose	292	0	5.41	1.131
Time flies when I am working	292	0	5.37	1.201
At my job, I feel strong and vigorous	292	0	5.60	1.158

contd. table 2

Items	*N*		*Mean*	*Std.*
	Valid	*Missing*		*Deviation*
I am enthusiastic about my job	292	0	5.90	1.049
When I am working, I forget everything else around me	292	0	5.32	1.364
My job inspires me	292	0	5.82	1.202
When I get up in the morning, I feel like going to work	292	0	5.17	1.488
I feel happy when I am working intensely	292	0	5.94	1.058
I am proud of the work I do	292	0	5.79	1.065
I am immersed in my work	292	0	5.67	1.036
I can continue working for very long periods at a time	292	0	5.74	1.118
To me, my job is challenging	292	0	5.49	1.159
I get carried away when I am working	292	0	5.46	1.227
At my job, I am very resilient, mentally	292	0	5.41	1.147
It is difficult to detach myself from my job	292	0	5.49	1.194
At my work, I always persevere, even when things do not go well	292	0	6.02	.988

Note: N- "Total number of samples"

Source: Authors' Own Compilation

Table 2 depicts the mean and standard deviations of all 17 items to measure the level of TE in four state universities in Odisha. The mean values of the maximum variables are above 5.0 and variable-17 value is above 6.0. It represents that all the respondents have given their opinion regarding the items either very often (5) or always (6). The SD values in the aforesaid table range from .988 to 1.488. It shows that the opinions of the respondents do not differ much.

F-Test (ANOVA)

Table 3: F-statistics of Demographic Variables: Gender, Age, Marital Status, Qualification, Stream, Experience, and Designation on Vigor

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Gender	Between Groups	.271	1	.271	.524	.470
	Within Groups	150.309	290	.518		
	Total	150.580	291			
Age	Between Groups	13.094	4	3.274	6.833	**.000**
	Within Groups	137.486	287	.479		
	Total	150.580	291			

contd. table 3

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Marital Status	Between Groups	.107	1	.107	.207	.649
	Within Groups	150.473	290	.519		
	Total	150.580	291			
Educational Qualification	Between Groups	11.328	3	3.776	7.810	**.000**
	Within Groups	139.252	288			
	Total	150.580	291	.484		
Stream	Between Groups	.246	3	.082	.157	.925
	Within Groups	150.334	288			
	Total	150.580	291	.522		
Designation	Between Groups	11.842	3	3.947	8.194	**.000**
	Within Groups	138.738	288			
	Total	150.580	291	.482		
Experience	Between Groups	7.354	2	3.677	7.419	**.001**
	Within Groups	143.227	289			
	Total	150.580	291	.496		

Note: Significance at *P<0.05

Source: Authors' Own Compilation

Table 3 explains the ANOVA test results of demographic variables of "gender, age, marital status, qualification, stream, experience, and designation" on vigor. Here, vigor is a dependent variable, and demographic variables are independent variables. For variables like age, educational qualification, designation, and experience, the significance value is less than 0.05, indicating there is a significant effect of these variables on vigor. However, in the case of other remaining variables such as gender, marital status, and stream, there is no significant effect of these demographic variables on vigor.

Table 4: F-statistics of Demographic Variables: Gender, Age, Marital Status, Qualification, Stream, Experience, and Designation on Dedication

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Gender	Between Groups	.790	1	.790	1.317	.252
	Within Groups	173.878	290	.600		
	Total	174.667	291			
Age	Between Groups	6.694	4	1.673	2.859	**.024**
	Within Groups	167.974	287	.585		
	Total	174.667	291			

contd. table 4

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Marital Status	Between Groups	.871	1	.871	1.454	.229
	Within Groups	173.796	290	.599		
	Total	174.667	291			
Educational Qualification	Between Groups	10.675	3	3.558	6.249	**.000**
	Within Groups	163.992	288			
	Total	174.667	291	.569		
Stream	Between Groups	.086	3	.029	.047	.986
	Within Groups	174.581	288			
	Total	174.667	291	.606		
Designation	Between Groups	6.636	3	2.212	3.791	**.011**
	Within Groups	168.031	288			
	Total	174.667	291	.583		
Experience	Between Groups	5.901	2	2.951	5.053	**.007**
	Within Groups	168.766	289			
	Total	174.667	291	.584		

Note: df= "Degree of freedom", F-value= "Frequency value", P-value= "Significance value". Significance at *P<0.05.

Source: Authors' Own Compilation

Table 4 depicts the F-test result of demographic variables on dedication. The P-value indicates that for variables like age, educational qualification, designation, and experience, it is significant as the value is less than the threshold value of 0.05. However, for gender, marital status, and stream variables, the value is not significant as the value is greater than 0.05.

Table 5: F-statistics of Demographic Variables: Gender, Age, Marital Status, Qualification, Stream, Experience, and Designation on Absorption

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Gender	Between Groups	.044	1	.044	.071	.791
	Within Groups	181.782	290	.627		
	Total	181.826	291			
Age	Between Groups	3.651	4	.913	1.470	.211
	Within Groups	178.175	287	.621		
	Total	181.826	291			

contd. table 5

Demographic Variables		*Sum of Squares*	*df*	*Mean Square*	*F-value*	*P-value*
Marital Status	Between Groups	.094	1	.094	.150	.699
	Within Groups	181.732	290	.627		
	Total	181.826	291			
Educational Qualification	Between Groups	6.565	3	2.188	3.596	.014
	Within Groups	175.261	288			
	Total	181.826	291	.609		
Stream	Between Groups	1.880	3	.627	1.003	.392
	Within Groups	179.946	288			
	Total	181.826	291	.625		
Designation	Between Groups	8.428	3	2.809	4.666	.003
	Within Groups	173.398	288			
	Total	181.826	291	.602		
Experience	Between Groups	3.356	2	1.678	2.717	.068
	Within Groups	178.470	289			
	Total	181.826	291	.618		

Note: df= "Degree of freedom", F-value= "Frequency value", P-value= "Significance value". Significance at *P<0.05

Source: Authors' Own Compilation

Table 5 is all about the F-statistics of absorption for demographic variables of "gender, age, marital status, qualification, stream, experience, and designation". For variables like educational qualification and designation, a P value less than 0.05 indicates a significant effect, whereas for other variables, it is not significant as the value is greater than the threshold value.

The result of the analysis is discussed in the following glance. Firstly, from the analysis, it is found that gender has no significant effect on vigor, dedication, and absorption. This result is similar to some previous studies (U. Sharma and Rajput, 2021).

With concern to age, it is found that age has a significant effect on the vigor and dedication dimensions of TE. The result of such research is equal to the findings of the research carried out by (Chaudhary and Rangnekar, 2017). In the case of marital status, no significant effect in the current study is found. It indicates that the levels of TE do not vary between married and bachelor teachers. This result has similarities with the previous study (Sharma *et al.*, 2017). However, the result is contradicted by some past studies (Shukla *et al.*, 2015); (Sharma and Rajput, 2021). For educational qualification, the result entails that educational qualification has a significant effect on all three dimensions of teachers' engagement. This finding is contradicted by the results of (Avery *et al.*, 2007); and (Garg, 2014). Further analysis indicates that the stream has no significant effect on vigor, dedication, and absorption. With concern to designation, it is found that designation has a significant effect on teachers' engagement dimensions. It refers that engagement differences based on designation of teachers. (Coetzee and

Villiers, 2010) have identified that permanent employees are better engaged than temporary employees. (Rajput and Sharma, 2022) also described that engagement among teachers varies across their levels. Lastly, experience has a significant effect on the vigor and dedication dimensions of TE, except absorption. Engagement level varies based on years of experience. This result is supported by (Robinson *et al.*, 2004); (Robinson *et al.*, 2004); and (Rajput and Sharma, 2022).

6. Conclusion

This study began with the objective of measuring the effect of demographic variables on levels of university TE. To fulfill this objective, three sub-objectives were formulated based on three dimensions of engagement. All the dimensions and reliability of scales are tested in this study. The demographic variables undertaken in this study are "gender, age, marital status, qualification, stream, experience, and designation". From the analysis, it is found that out of seven variables, two variables: qualification and designation, affect vigor, dedication, and absorption. It envisages that as the qualification and designation of teachers change, their energy level, mental flexibility, work involvement, sense of significance, work focus, and happiness in work enhance. Age and experience also have a significant effect on vigor and dedication. Whereas gender, marital status, and stream have no such effect on any dimension of university TE in Odisha. Therefore, this is safe to conclude that demographic variables are significantly affecting TE level at university. This study will not only supplement valuable insight into the existing scant literature but also help policymakers to formulate policy for increasing TE.

Scope for Further Study

This study has been conducted at four state universities. Out of which two are public and two are private universities. In future studies, more universities may be included. Further researchers may conduct inter-item analysis to find out more specific results in this regard.

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What Second-Generation Internal Family Business Successors Think: A Case of Construction Family Businesses in India

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Abstract: This study is aimed at understanding the perception of second-generation internal family successors, towards their family business with specific reference to the construction sector in India. In a country like India, over 90% of the construction business houses are family held, thus there is an increasing need to understand motivators to succession in this sector. The study examines four cases using an inductive research approach, and establishes a link between the factors identified from literature and cases. Several hypotheses are tested using the survey technique with a unique sample of 47 second generation construction family business entrepreneurs. The study findings are significant, confirming the existence of internal motivation amongst successors in the construction sector. An independent sample t-test establishes no signs of interjected or forced motivation for this sector. In summary, parents are found to give a free rein to their successors as far as career choice is concerned. A linkage between Self Determination Theory and sector specific successor motivation is established by this study.

1. Introduction

In family business, it is expected that the next generation will take up the mantle of business responsibilities. The founding family members pass on the responsibility of their family business (FB) to the next generation and this process continues through succession planning (Sambrook, 2005). As the activity is not restrictive in nature, it allows a company to search for both internal as well as external successors. There are several studies which claim that the internal or external choice of successor depends on the nature of industry, the competition, complexity of business, the kind of education requirement etc. For instance, the business, where tacit knowledge (knowing by doing) and relationship is key, an internal successor is preferred (Boyd and Royer, 2012). Certain sectors have relatively simple

technologies and require application of idiosyncratic or tacit knowledge (Polanyi, 1996). Hence applying transaction cost theory, the cost of passing down such sticky knowledge is lowest when the successor is an internal family member (Bjuggren and Sund, 2002). Further, in businesses with relatively simpler technologies and where knowledge of local conditions, labour availability, and political influence is of utmost importance for profitability, such as agriculture and construction related businesses, a potential internal successor greatly reduces the transaction cost of succession (Royer *et al.*, 2008).

However, the question of internal family succession based on sector has not received much attention (Brockhaus, 2004). The issue of internal family succession is important and worth an examination because the choice of successor is dependent on the type of business as noted earlier. Amongst several types of businesses, construction business is a complex one, as it relies on tacit knowledge and relationship building. However, at the same time it also requires a great deal of technical knowledge about construction and skill-set related to the sector. Therefore, it becomes important to study the succession planning aspects in family-owned construction firms. There are few studies that have examined succession planning in the construction industry; however, those studies are uni-dimensional (Perrenoud and Sullivan, 2017). Those studies highlight overall construction firms, rather than family-owned construction firms. Further, those studies have been conducted from the succession planner's perspective and the successors' view is absolutely ignored.

India would need to spend $4.5 trillion on infrastructure by 2030 to realise the vision of a $5 trillion economy by 2025 and continue on the escalated trajectory until 2030. India needs to spend about $1.4 trillion over these years on infrastructure (Mohanty *et al.,* 2022). Infrastructure projects under the National Infrastructure Pipeline (NIP) will receive an equal share of contribution in terms of capital expenditure from the Centre and States of 39% each while private sector share being 22% (Samanta *et al.,* 2022). The Centre for Monitoring Indian Economy (CMIE) database reveals that there are more than 400 listed companies and 4000 unlisted companies in India, that are dealing with construction related business. However, there is a commonality amongst all these big or small-scale construction firms, i.e., they are dominated by family-owned business houses. Hence, the question of internal succession in construction FB is all the more important.

However, the current study focuses only on the second-generation entrepreneurs (2nd Gen) as previous studies have shown that succession of 2nd Gen to control FB created by their parents is a challenging and unsatisfactory process. Since the parent is the founder owner and associates very closely with the business, there is an understandable difficulty experienced in handing over the reins to the 2nd Gen (Osborne, 1991). There is a pressing need to examine internal succession with specific reference to the construction industry's 2nd Gen. In order to fill this research gap, authors in the current study examine the perception of this particular category of family successor about the succession process associated with joining their family construction business.

2. Literature Review-Motivators to Join Family Business

Factors influencing internal family succession have been discussed under four heads – Individual, Relation, Contextual and Financial (De Massis *et al*, 2008). Family Business researchers have considered the successors willingness to join business, ability, life span of business, conflicts between parent and

child, change in technology, successor training, and feedback and family communication at length, as important issues.

The risk-taking capability of the successor plays a major role while opting for FB in construction. If the parental business enjoys good reputation in the market, the successor may be motivated to take it forward. However, keeping in mind the risk and uncertainty of the business/sector as an important factor, it always depends on the leadership support from the parent and inheritance of problem-solving skills/knowledge by the successor. As construction is a short-term capital-intensive business and it requires more working capital than fixed capital, the successor not only needs to be good at technical skills, but should also have a better understanding of financial markets and managing financial resources.

Hence it follows, that there must be some common factors or drivers that motivate and influence the choice of career of internal family business successors from these sectors. Table I below summarises the drivers for effective internal succession that flow from literature.

Table 1: Effective Succession Drivers for 2nd Gen

Driver No.	*Driver (Authors)*	*Explanation*
1	Internal motivation (De Massis *et al.*, 2008; Murphy *et al.*, 2019; Pattanayak & Kakati, 2021; Porter & Lawlor, 1968; Sharma *et al*, 2001; Vroom, 1964)	Self-behaviour of the successor and willingness to join the FB depends on his own interest, risk taking ability, capacity for problem solving
2	Influenced motivation (Dawson *et al*, 2013; Lalhunthara, 2019; Sharma & Irving, 2005)	Mind-set of "having to" or "needing to remain" within the family firm created out of an external locus (family loyalty, social persuasion, expectation of parents or perceived lack of opportunities outside FB).
3	Personal relationship of incumbent with successor (Chrisman *et al.*, 1998; Venter *et al.*, 2005; Sharma *et al*, 2001)	Existence of trust and respect of actively involved family members towards successor and ability to g*et* along.
4	Family communication (Venter *et al.*, 2005; Rautamaki & Paakkanen, 2016, Murphy *et al.*, 2019; Bloemen-Bekx *et al.*, 2019)	Open and earnest communication combined with willingness to acknowledge each other's achievements and lacunae, characterised by a good parent-child relationship.
5	Financial factors(Dumas *et al.*, 1995; De Massis *et al*, 2008; Nomani & Sen, 2018; Sharma, 2004; Venter *et al.,* 2005)	Perceived expectation of monetary rewards from business coupled with offer of monetary security and allied benefits, characterised by healthy working capital, leverage and profitability.
6	Education requirement (Chrisman *et al.*, 1998)	Attainment of knowledge, skills and abilities to enhance competence through formal means (education).

contd. table 1

Driver No.	*Driver (Authors)*	*Explanation*
7	Successor training (De Massis *et al.*, 2008)	Formal leadership training plans involving work both inside and outside the FB
8	Successor availability (Getz & Petersen, 2004)	Existence of a viable heir within the family who can be considered for succession.
9	Nature of Industry (competition) (Stavrou, 1999; Royer *et al*, 2008; Getz & Petersen, 2004)	Existence or lack of industry specific barriers (seasonality of demand, location constraints, government restrictions, taxation) to inheritance amongst family members.
10	Technical complexity (Royer *et al*, 2008)	Requirement for successor to possess experiential, general and industry specific knowledge in varied proportions.
11	Successor personality (Chrisman *et al*, 1998; Dawson *et al*, 2013)	Complex psychological characteristics of the successor which enhance motivation to join FB, such as need for independence, creativity, risk taking capability, leadership, ability to take up responsibility, assuming locus of control, integrity, aggression to name a few.

Source: Compiled by Authors from Literature

3. Research Methodology

This study was carried out in two phases. In phase one, case studies were used (inductive research approach) for recognizing microlevel stimuli of successors and their insight about the FB. Cases are identified as real-life phenomena in their naturally occurring environment (Yin, 2003). Such cases are well-matched for the determination of explaining on the prevailing theories or generating a new theory emergent from the data (Eisenhardt, 1989).

In phase two, a link between the factors identified from the literature and the factors extracted from the cases was established to test the hypothesis. For hypothesis testing, a comprehensive questionnaire was developed. Snow ball sampling technique was followed to identify second generation successors of family construction business. Respondents were identified from business directories for construction and allied areas and profile of successors was cross checked with the company website and CMIE Prowess owner data (where ever available). Authors identified more than 200 such respondents who were 2nd gen entrepreneurs, however, only 47 of them responded to the survey. The questionnaire was divided into two sections, where section one was about the demographic profile of respondents and two was the main part. The questions in section two of the questionnaire were asked on five-point scale. A value of one (1) would suggest strongly disagree, two (2) suggest disagree, three (3) suggest neutral, four (4) suggest agree and five (5) suggest strongly agree. The responses of these questions were examined through basic descriptive analysis and one sample t test. The demographic profile of the respondents and basic information of business is provided in Table 2.

Table 2: Demographic Profile and Business Information

Description	*Nos.*	*Appx. Percent*
Type of business (Multiple options allowed)	47	
Real Estate	26	55.30%
Construction & Infrastructure	26	55.30%
Consulting	5	10.60%
Other Related	6	12.80%
Age		
Between 21 to 30	39	83%
31 to 45	7	14.90%
45 to 60	1	2.10%
Highest Education Qualification		
Civil Engineer - Graduate/ PG	30	63.85%
Architect - Graduate/ PG	5	10.65%
Other branches of Engineering -Graduate/ PG	1	2.10%
Graduate in areas other than the above	4	8.50%
Post Graduate in areas other than the above	7	14.90%
Gender		
Male	43	91.50%
Female	4	8.50%
Annual Turnover of your family business		
10 to 50 million INR	16	34.00%
50 to 200 million INR	14	29.80%
200 to 500 million INR	9	19.15%
Above 500 million INR	8	17.05%
Since how long are you actively engaged in your business		
0 to 5 Years	35	74.50%
5 to 10 years	7	14.90%
10 to 20 Years	3	6.40%
More than 20 years	2	4.20%

Source: Authors' compilation

4. Data Analysis

4.1 . Case Analysis

The study is investigative in nature, and the existing literature does not relate to the construction sector. Hence, in order to understand the perception of second-generation successors in construction family, the study engaged an in-depth analysis of four suitable firms as case examples. According to

Yin (2003) there are no fixed ways to select the number of cases, however, it is suggested that multiple cases provide better outcome. Further, a greater number of cases can help improve clear reflection of the phenomenon (Gerring, 2004; Ketokivi and Choi, 2014; Prakash and Phadtare, 2019). Case studies also help the investigator to use various indications and arrive at findings.

In the present study, the cases selected are small and mid-sized firms working in construction sector and geographically spread across the India. The data was collected through interviews. These interviews were conducted and recorded between February 2023 and May 2023 on and each of the interviews were carried out for approximately 45 minutes to 1 hour. All interviews were recorded and transcript were used for further analysis. On account of confidentiality of information, the original names of the firms and the successors interviewed are not disclosed. They can however be obtained upon contacting the authors of this paper.

Background of Firms

Firm A was established in the garden city of Bengaluru a very busy metro in the southern part of India, in the year 2005 by (Respondent one) R1's father. It began as a partnership firm and was then incorporated into a limited liability company later, as the business grew. R1 was ten years old when his father began his entrepreneurship journey. The business currently has completed around 120 live projects. The number of permanent employees is around 140. R1 is the only child of his parents and is a civil engineer by profession.

Firm B started in 2001 by (Respondent two) R2's father and uncle as small-scale building contractors Raipur (a tier 2 city in central India). Their initial contracts consisted of standalone small properties. Today they work with around 30 permanent employees, 20 sub-contractors and 200 labourers on site. When R2 joined the business, the firm had begun a huge luxury project of 125 bungalows with state-of-the-art amenities in the city of Raipur (Central India). R2 grew up in a joint family with his paternal uncle playing the role of mentor to him.

Firm C started as a textile company in 1992 in New Delhi (capital city of India, located in the northern part of the country). The business diversified into real estate and hospitality in 2005. Currently they have also expanded into manufacture of construction chemicals. They have approximately 150 full time employees.

Firm D is a 25-year-old business based in Bhubaneswar (an ancient temple town and now rated one of the best smart cities, in the eastern part of the country). The firm started with taking up small contracts for civil works. In 1995, the founder owner diversified into the real estate sector. The business model moved into buying land, constructing residential and commercial properties ranging from small studio apartments to high end luxury villas. The approximate full-time employees are 300.

Although the firms belonged to different parts of the country and the family backgrounds varied, authors were able to identify a focal behaviour amongst all the successors from the interviews.

Case Discussion

Every one of the successors had been introduced to the business before their education was complete. A small internship or an informal site visit seems to have been the method used to motivate the

successor to consider joining the FB. A small aspect of the business has been introduced to the successor to begin with (*I understood the labour aspect, R1)*. The successors seem to have been more and less internally motivated. In course of the conversation, authors did not come across any interjected or forced motivation except probably to some extent in case of R2 (*brought up in a joint family… expected to return to the business*)

The parents in each of the cases have given a free rein as far as career choice was concerned. In fact, R2 reveals that his sibling was supported by the family to venture into an unrelated area (*My younger brother was not very keen on the core business. He has started a fashion school. We support him in it*). In two cases, parents have even put off the decision regarding succession for later *(He talked me into moving ahead with studies. You will get your way don't think about it now, he said)*. Obtaining a good educational background has been given priority over the decision to take up FB as a career choice *if you don't do well in studies, I won't allow you to join (R3)*.

Each of the successors being more or less internally motivated at a young age have chosen to graduate in areas aligned to their respective FBs. In fact, some of them have taken up a post-graduation specialising in their FB *(I felt by doing civil (engineering), I could substitute what my father was not able to do (R2)*.

In spite of being technically fairly skilled, each of the successors have stressed on the importance of tactical skill in running the business in alignment with findings by Royer *et al*, 2008. Knowledge of local conditions and ability to handle labour is of high importance in the construction industry. This gains precedence over requirement to have technical knowledge. *(For plant and machinery etc.., we always call experts to solve the problems – R1; you got to keep your ego aside and learn from other experienced people - R2; Business is about winning hearts – R4)*

None of the successors expressed a strong desire to have their children take up FB. They were quite open about leaving career choice to their children. Since the interviewees were in the early stages of succession, they have understandable expressed a desire to achieve much more and have not rated their satisfaction at highest levels. Their standards for measurement of success do not seem to be financial in nature. Currently they measure success by number of projects completed, satisfaction of employees and level of confidence to do well in future. (*Their families depend on me. So, I have a responsibility towards them, R1*) Responses show uncertainty when it comes to continuing the succession to the next generation (*It's difficult to see so far into the future, R4*).

The above lead authors to believe that there are several commonalities in the factors influencing internal succession in the construction business. In order to test the validity of the constructs, appropriate hypotheses were developed based on theory and the above case inferences. They are then subject to further tests using sampling techniques.

4.2. Hypotheses Development and Testing

In stage II, authors attempt to look at the relationship between the drivers. In an industry with high tacit knowledge requirement and low requirement of technical expertise, the locus of motivation for an internal successor to enter the family business is expected to be internal. In other words, a successor to such family businesses will take over the mantle voluntarily by choice (autonomous motivation) rather than by force (interjected motivation).

This is based on self-determination theory (SDT), proposed first by Deci & Ryan (1985), which classifies reasons for individual's behaviour into self-determined (autonomous) and non-self-determined (controlled). A young family member who perceives lack of opportunities outside the family business on account of high entry and exit barriers or who perceives parental dissatisfaction on not choosing the family business as a career would also be motivated to join the family business but the same would fall under the category-controlled motivation. On the other hand, when a successor is motivated to join the family business which is in a sector with low entry and exit barriers, the motivation to do so must be of an autonomous nature (Schroder & Rodermund, 2013). Preparation level of the heir in terms of training, knowledge and skill development is usually considered a key element in internal succession (Morris *et al.*, 1997). A business not requiring high technical skills, simplifies the succession process, removes the barrier of high skill requirement of the successor and in turn becomes a reason for motivation to join the family business. This can also be seen from the cases wherein all successors agree that in construction line of business, high technical skill may not be a top priority in comparison with the need for high tactical skills. Since entry and exit barriers are relatively lesser in such industries, a successor who takes up family business will do so voluntarily. It needs to be kept in mind that a successor to family business in such as industry has chosen to take up family business despite availability of ample opportunities outside the family business. This statement is corroborated with live experiences of respondents in the cases. R2 confirms that in-spite of getting a campus placement; he turned it down in favour of the family business. Similarly, R3 also worked for two years in the industry in reputed firms before moving back to his family business.

Hence, authors test the hypotheses 1 and 2:

H_{a1}: *The successors in construction sector are high on autonomous motivation*

H_{a2}: *The successors in construction sector are low on interjected motivation*

According to SDT, parent's relational support is an important factor that determines offspring's motivation to choose a particular career. Most parents in family firms encourage their offspring to take on succession in family business. Yet research shows that succession rate of the second generation is less than 30% and this rate is further reduced to 10% in the third generation (Mahto *et al*, 2019). It has been established that lack of trust in the potential successor by the parent and lack of sufficient knowledge and skills by the potential successor greatly contribute to succession failures (DeMassis *et al*, 2008; Venter *et al*, 2005). Hence it leads us to believe that in an industry which does not require high technical skills, there are lesser reasons for the parent to display lack of trust in the offspring.

Availability of easy entry and exit options would lead to a more positive and relaxed approach by the parent in terms of motivating the offspring in taking family business as a career choice. The parent may even be willing to let the successor *try flying out in the world, before returning to the nest"*. Responses from R2 show that while he got into the family business after taking some experience in the industry, his brother who was not inclined to join the FB is running his own fashion school. All the respondents unanimously agree that they were not forced by their family to take up the FB, with the exception of only R2 who faced some emotional pressure to take up FB since he was from a joint family. This leads authors to hypothesise that in such sectors, a successor would have experienced very less parental control in his/ her career choice. Hence hypothesis 3 can be stated as follows:

H_{a3}: In Construction sector, the successors' motivation by way of parental control in career choice is minimal

Career choice of an individual is to a great extent dependent on the educational qualification of the individual. The ideal age group within which an individual makes a choice regarding educational qualification would be between the age of 16 and 21. A potential successor who is motivated autonomously to join the family business may build up such motivation by way of formal methods such as short stints of training at the work site during vacations or by way of informal methods such as dinner table discussions, stories, sharing of experiences by adults etc. All respondents in our cases had been introduced to some jobs on their FB's construction site at the time of high school or college. The parents have taken a particular interest in exposing the children to the extent of difficulties they would face on site if they joined the FB. One such candid case is R3 where his father tells him that he will be allowed to join the FB only if he performs well in the academic front. Another such case is R1 who says his father wanted him to know that site management involved a lot of ground work. They have all narrated stories of particular activities they took up and the way in which they aligned their educational qualifications with the requirements of FB. Hence, authors hypothesise that choice of education for successors under discussion would be more or less in an area that is related to the family business and such choice would be voluntary and not forced by the parent or society. Hence hypothesis 4 and 5 could be stated as follows:

H_{a4}: in construction business, the parents use informal methods to motivate successor to join family business

H_{a5}: in construction business, the successors' choice of education would be autonomous

However, needless to say, even if the industry has low entry exit barriers or is not very technically complex, internal succession may fail to occur on account of factors such as unavailability of a successor, unwillingness due to personality of the potential candidate or financial unattractiveness of the business. Some aspects of the cases reveal that although the successor had taken up FB voluntarily, there are certain points of time when the successor feels a sense of working under the parents' control. It can be inferred from what R2 says about taking ten years to begin working on a project independently. Levels of satisfaction in all three cases were also not very high. Although this could be attributed to the fact that the successors in the cases were young, it cannot eliminate a chance of discontinuation. Yet it is interesting to explore the above-mentioned hypotheses with regards to succession, from a sectoral point of view in the construction industry.

In order to test the first hypothesis i.e., "The successors in construction sector are high on autonomous motivation" three questions are asked.

1. I have always felt a desire and need to join my FB
2. The decision regarding my education was taken by me to further my interests with my FB
3. I am motivated to carry forward the legacy of my FB

The results in Table 3 revel that the responses have a mean of more than three. Since, three stands for neutral, a one sample t test are conducted, where the responses are compared with a standardized value of three. The results suggest that there is a positive significant mean difference, hence H_{a1} is accepted.

Table 3: Descriptive Analysis and One Sample t-test

Question	*Mean*	*SD*	*Skewness*	*T (test Value=3)*	*Sig. (2-tailed)*	*Mean Difference*	*Hypothesis Status*
I have always felt a desire and need to join my FB	4	0.84	-0.5	7.94	0.00**	1	H_{a1}-Accept
The decision regarding my education was taken by me to further my interests with my FB	3.89	1.15	-1.32	5.13	0.00**	0.89	H_{a1}-Accept
I am motivated to carry forward the legacy of my FB	4.18	0.92	-0.94	8.5	0.00**	1.18	H_{a1}-Accept
I had no alternative choice but to join the FB	1.86	1.03	1.1	-7.35	0.00**	-1.14	H_{a2}-Accept
I joined the FB as my parents desired it	2.59	1.17	0.5	-2.32	0.02*	-0.41	H_{a3}-Accept
I joined the FB due to social pressure from Friends and family	1.59	0.79	1.18	-11.88	0.00**	-1.41	H_{a3}-Accept
While growing up, I have heard narratives/ stories of older generation related to the FB	3.57	1.23	-0.52	3.07	0.00**	0.57	H_{a4}-Accept
The decision regarding my education was taken by my parents	2.34	1.1	0.81	-3.98	0.00**	-0.66	H_{a5}-Accept

Source: Authors' Complication **Significant at 1% *Significant at 5%

In order to test the second hypothesis i.e., "The successors in construction sector are low on interjected motivation", one five-point scale question "I had no alternative choice but to join the FB" is asked. The mean diffidence is negatively significant; hence, authors can conclude that successors in construction sector are low on interjected motivation. For the third hypothesis, "in Construction sector, the successors' motivation by way of parental control in career choice is minimal", another set of two questions are asked. These questions are "I joined the FB as my parents desired it" and "I joined the FB due to social pressure from Friends and family". The results show a negative mean difference; hence, authors conclude that in construction sector, the successors' motivation by way of parental control in career choice is minimal. Finally, in order to test the fourth and fifth hypothesis the following questions are asked.

1. While growing up, I have heard narratives/ stories of older generation related to the FB
2. The decision regarding my education was taken by my parents

The results for fourth hypothesis show a positive mean difference, hence authors conclude that "in construction business, the parents use informal methods to motivate successor to join family business". For the fifth hypothesis the mean difference is negative, hence it can be said that "in construction business, the successors' choice of education would be autonomous".

5. Discussion and Conclusion

In presenting live interview transcripts alongside survey results, we have striven to explore some of the fine-grained details of motivators for succession amongst 2nd generation entrepreneurs, in construction businesses. In doing so, a linkage between the Self Determination Theory (SDT) and sector specific successor motivation is established. Our results reveal stark similarities in succession drivers, when an inquiry is made at a sector level. Since the construction sector is high on tacit and sticky knowledge, an internal successor who takes up the mantle does so, willingly. The results from both the interviews as well as the survey show very high levels of automatic motivation amongst the successors. The study also reveals that parents who are first generation entrepreneurs in this industry, did not display a tendency to push the offspring into following in their footsteps. Hence successors are very low on interjected motivation.

Insights from the real world are helpful in understanding the role that sector plays in successor motivation. A sector where the entrepreneur learns by doing and observing, attracts internal successors through self-efficacy. This is a very important finding in the field of research where many avenues are being explored to encourage internal motivation rather than coerced motivation, in a successor.

It flows therefore naturally that career choice of the successor is self-determined, rather than controlled by the parent. Our study finds that for the sector under study, the successor makes the choice of career at an early age and this is influenced through both informal and semi-formal means like casual discussion at the dinner table, an opportunity to take up an internship at the family business, while the potential successor is still in high school or college. This in turn influences the successor's choice of higher education and career path. The interviews even reveal that parents are willing to let their offspring gain work experience at other organisations and try making a career outside the family business, in case the offspring is not inclined to take up the mantle. In a business with high entry

barriers and where related technical qualification of a successor is of paramount importance, parents would be under pressure to induct the offspring into the family business, so that the benefits accumulated over the years are not lost to the next generation.

We extend the argument further, to propose that such natural acquisition of knowledge in the manner of "learning by doing" combined with autonomous motivation and related education, boosts ESE in 2nd generation successors of the construction industry. (Royer *et al*., 2008; Sardeshmukh & Corbett, 2011; Vallejo, 2009).

The study has not examined the behavioural aspects of 2nd generation entrepreneurs or the comparative financial performance of businesses before and after succession. Since the focus of the study is only family-owned construction businesses run by successors, the sample size is limited. Sector wise similarities, in motivation determinants for 2nd generation entrepreneurs, can be explored in industries which are high on technical knowledge and experiential knowledge to yield interesting results. A similar study on the agricultural sector, which resembles the construction sector in terms of knowledge requirements, can validate the results already obtained from the construction sector.

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Factors Influencing Acceptance of Fin-tech Service Amongst Banking Customers: An Empirical Analysis with an Extended TAM Model

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Keywords

Financial technology, SEM, TAM, Attitude, PEU, PR, BI, Trust

JEL Classification

E58, G21, L24, O21, G20

Abstract: The upward thrust of financial technology has spurred huge studies into integrating information technology within the economic quarter. While efforts focused on effective implementation strategies, scant interest became paid to the pivotal factors using financial technology carrier popularity and acceptance. This Research Paper introduces a better TAM Model, encompassing consumer INN-innovativeness, G authorities guide, BI logo photograph, and PR - perceived threat, all influencing Trust accepted as true. The middle objective is to scrutinize client acceptance of financial technology offerings. We performed a survey amongst lively clients of Commercial Banks, garnering 387 valid responses. Employing an SEM, we analysed information to discover relationships between variables and proposed hypotheses. Results unveiled that consumer trust considerably influences financial technology acceptance attitudes. Surprisingly, PEU and PR showed no substantial influence on patron attitudes. Our look enriches financial technology acceptance literature by way of delving into the determinants of purchaser attitudes, integrating considerations inside TAM.

1. Introduction

Digital technologies, such as blockchain, extensive data, and intelligent financial guidance, are increasingly being utilized in the realm of fintech finance. Global investments in fintech have experienced a remarkable surge from $12.2 billion in 2010 to a staggering $153.1 billion in 2016, signifying an astounding twelve-fold growth worldwide during this period. The quantity of fintech projects has also seen a significant rise, with the number increasing from approximately 800 between April 2015 and December 2000. In 2016 alone, fintech investment reached an impressive $23.2 billion, demonstrating an annual growth rate of 21.5% (Gabor and Brooks, 2020). While conventional blanks typically serve purposes like

deposits, payments, loans, and so on, certain fintech vibrations provide distinct user experiences that enable profit calculations or purchases.

Fintech integration in banking aims at enhancing user experience and performance. Current research primarily scrutinizes fintech strategies and risks from suppliers' viewpoints. For instance, Zavolokina *et al.* examined Indonesian bank-fintech "peer-to-peer" models (2016), while Chang *et al.* explored competition between Indonesian banks and fintech entities. Understanding fintech's impact on consumer behaviour is vital as millennials predominantly embrace fintech, unlike older generations favouring traditional banks. Analysing factors influencing consumers' fintech acceptance boosts service quality and fortifies bank-consumer relationships. This comprehensive approach broadens insights into fintech acceptance, as per Priem and Swink (2012). Despite limited current finances, millennials' increasing financial literacy positions them as crucial players in banking. This study centres on exploring relationships among bank users' acceptance behaviours via the According to the Model of New era of technology adopting a model of devis, 1989 targeting for an investigation and discussion of these factors. Furthermore, the paper delivers an additional noteworthy contribution, to be further elaborated.

2. Review of Literature

2.1. Fintech

Researchers from all over the world have extensively studied the association between advancements in technology and the development of new economic strategies. The concept of "economic depth" introduced by McKinnon and Shaw in 1973 has had a significant impact on the rapid growth of the science and technology sector. Fintech, which involves the use of cutting-edge technology to expand financial services, takes advantage of emerging IT, cloud computing and the (IoT) Nakashima, (2018). classify Finance+Tech. as a specialized field that utilizes state-of-the-art technology to expand the value of services and operational efficiency, particularly in the banking industry (Gai *et al.*, 2018).

Studies focusing on fintech's security and privacy concerns emphasize issues such as the centrality of data, vulnerability of tools, usability, and service models (Davis, 1985). Arner *et al.* stress the distinction among fintech and conventional monetary facilities, emphasizing its role in expanding conventional businesses over the submission of advanced tools such as big data, cloud computing, and mobile technology. In a research paper, financial technology is defined as a modern category of monetary facilities that makes practice of advanced tools mobile technology, IoT etc.

2.2. Hypotheses and Research Model

This Model (TAM), which emerged in 1986, surpassed the restrictions of the (TRA) by incorporating theories of expectancy and self-efficacy into the field of behavioural science. TAM primarily focuses on individual behaviour concerning the acquisition of technological knowledge. Venkatesh, V., and Bala, H. (2008) assert that TAM emphasizes the importance of PU and EU are crucial elements that influence the acceptance of technology. This model has gained widespread popularity in ICT research due to its effectiveness in explaining consumer willingness to embrace ICT. In the realm of fintech, TAM has become increasingly favoured for its ability to stimulate financial innovation through the

utilization of innovative ICT tools (Bagchi *et al.*, 2023). However, the application of TAM in fintech varies significantly, as it addresses unique challenges such as privacy, security, and industry-specific characteristics that are distinct from traditional ICT applications in online platforms and mobile payments (Ryu, 2018).

2.2a. Perceived Usefulness (PU)

In the TAM Model by Devis (1989), perceived usefulness plays a vital part in adopting information techniques, indicating a customer's accession to the technology's ability to enhance efficiency (Venkatesh, and Bala, 2008). In this study, it represents the users' inclination to embrace Fintech services based on the perceived positive impacts (Ng and Kwok, 2017). Multiple extensive empirical studies conducted in the past decade consistently demonstrate the positive influence it has on users' intentions (Saxena *et al.*, 2017; Featherman and Pavlou, 2003; Hong and Zhu, 2006). For instance, research on Chinese banking by Chang *et al.* highlighted Fintech's impressive capabilities in deep data analysis and user knowledge mapping. Similarly, Carlin *et al.* established a connection between millennials' acceptance of Fintech and life expectancy and financial knowledge acquisition (Chau and Ngai, 2013). Therefore, the assumption suggests:

H1: The (PU) is positively affecting users' attitudes (ATT) towards their acceptance of facilities

2.2b. PEU – 'Perceived Ease of Use'

The apparent simplicity of utilization, a component of the TAM, measures the equal effort required to comprehend a novel technology (Venkatesh and Bala, 2008). This examination pertains to the comfort and exertion experienced by consumers when utilizing Fintech services. Fintech endeavours to revolutionize banking by providing customized solutions and superior experiences. The ease of utilization emerges as a crucial factor that drives user acceptance (Abbad, 2013; Autoran and Tezcan, 2012). Scholars in the field of banking research have confirmed its connection to the acceptance of new technologies (Szopiński, 2016; Riquelme and Rios, 2010). Riquelme *et al.* emphasized its impact on users' inclination towards intricate financial systems on mobile devices. Fintech services that are user-friendly and convenient promote acceptance. Taylor *et al.*'s comparative analysis revealed that user-friendliness has a positive influence on PU in resource centre contexts (Zhao *et al.,* 2010).

H2: The (PEU) is positively affecting users' attitudes (ATT) towards their acceptance of facilities

H3: The (PEU) is positively affecting users' (PU) acceptance of facilities

2.2c. ATT – 'Attitude'

The way a person thinks and feels about something is what attitude represents, and their willingness to take a specific action is what behaviour intention measures Gupta, A., and Arora, N. (2017). When it comes to studies on the (TAM), having a favourable mindset towards technological innovation is crucial for wanting to accept it Shaikh, A. A., and Karjaluoto, H. (2015). The traditional TAM has proven It can be a reasonable and encouraging association among customer behaviour and acceptance intentions to use facilities. which has been extensively validated in research-intensive the banking industry

Hsu, C. et. al. (2011)., Aboelmaged, M. G., and Gebba, T. R. (2013). and Mcknight, D. H., and et. al. (2001). As a result, according to the theory.

H4: Users' (ATT) is affecting (INT) toward the acceptance of facilities

2.2d. Trust (TRU)

In the topic of acceptance study, trust is extremely important, just like the (PU) and (PEU) that attract users. In the realm of Fintech, trust becomes even more important due to the involvement of intricate data, necessitating an exploration of its impact on user attitudes and willingness to adopt. Trust has been researched in sociology, management, and organisational behaviour as a transdisciplinary concept. (Lewis and Weigert, 1985). It represents users' overall perception of the utility of an object. The research by Kesharwani *et al.* revealed the behavioural influence and formative nature of users' trust, which is shaped by their inherent traits (Malaquias and Hwang, 2016). Other studies affirm that higher levels of trust in service providers are correlated with increased user willingness and promotion of behaviour (Koksal, 2016). The indirect impacts of trust on Fintech acceptance support its relevance. (Hanafi *et al.*, 2014). Building on these insights, we propose the following assumption:

H5: Customer's trust (TRU) is Positively affecting (ATT) towards the acceptance of facilities

2.2e. BI – 'Brand Image'

The reputation of service providers greatly influences the provision of dependable services, assisting individuals in successfully achieving their objectives (Park, E., Kim, H., and Ohm, J. Y., 2015). Sang *et al.* discovered that peer-perceived brand insight plays a crucial part in the acceptance of government administration information systems (GAIS) (Sang *et al.*, 2010). In the field of Fintech, brand perception significantly influences how users perceive quality, value, and satisfaction (Saleem *et al.*, 2014). To adopt Fintech, having a positive perception of a brand is essential in establishing trust within an organization (Srivastava *et al.*, 2010). Semuel *et al.* suggested a solid brand perception decreases PR associated with sensitive data in Fintech services, thereby fostering user trust (Semuel and Lianto, 2014). Building on these insights, we propose the following assumption:

H6: Brand image (BI) is positively affecting customer's attitudes (ATT) to acceptance of facilities.

H7: Brand image (BI) is positively affecting customer's trust (TRU) in acceptance of facilities.

2.2f. PR – 'Perceived Risk'

It can be associated with an absence of confidence, significantly hindering the acceptance of technology (Siamagka *et al.*, 2015). In this context, it encompasses concerns related to finances and confidentiality that are inherent in the selection of financial technology facilities. Financial uncertainty relates to the potential loss of property due to fluctuating rates or other factors, while privacy uncertainty pertains to the disclosure of personal and transactional data in online financial usage. Khedmatgozar *et al.* emphasized the crucial role of risk perception in the acceptance of e-facilities (Sikdar *et al.*, 2015). Bansal *et al.* highlighted users' profound concern regarding the misuse of personal data, anticipating severe consequences within Fintech services (Khedmatgozar and Shahnazi, 2018). The reliance of

Fintech on technologies such as data and the IoT inherently poses risks during service provision (Bansal *et al.*, 2010). As banks increasingly offer technologically enabled financial services that require user data, trust in these services diminishes (Zhou *et al.*, 2010). Kim *et al.* revealed the adverse effect of apparent uncertainty on trust. Building on these insights, we propose the following assumption:

H8: (PR) negatively affecting users' (ATT) toward the acceptance of facilities
H9: (PR) negatively affecting users' (TRU) acceptance of facilities

2.2g. GS - Government Support

The significant role of government support greatly accelerates the acceptance of Fintech. Through its credibility, it builds trust by supporting the use of modern technology in the banking sector and investing in communication facilities. Kiwanuka *et al.* have established that government backing has a beneficial inspiration for accession to technology and the intention to practise it continually. Chong *et al.* (2010) have also confirmed the importance of government support in fostering trust in e-banking by incorporating relevant factors into the TAM model. we propose the following assumption:

H10: GS is affecting users' (ATT) concerning the acceptance of facilities
H11: GS is affecting users' (TRU) in the acceptance of facilities

2.2h. UI – 'User Innovativeness'

In the research, the concept of user creativity is Clarified as the individuals are inclined towards embracing novel products, technologies, or services. Elevated levels of user creativity signify a greater eagerness to embrace innovation, tolerate uncertainty, and exhibit favourable intentions towards utilizing the innovation. This indicates a decreased perception of risks and a heightened receptiveness to technological advancements. Adeiza *et al.* argued that innovation is an inherent human attribute that reflects users' curiosity in new areas of interest (Marakarkandy *et al.*, 2017). Furthermore, Kim *et al.* discovered in their investigation of user behaviour towards mobile payment acceptance that individual creativity plays a significant and positive role in users' inclinations to adopt mobile services, a finding supported by empirical research conducted by Leicht *et al.*(2018). Consequently, we propose the following assumption:

H12: (UI) is affecting users' (ATT) concerning the acceptance of facilities
H13: (UI) is affecting users' (TRU) acceptance of facilities.

The framework presented in the present article relies on previous studies, as seen in Figure 1. The study approach has been modified to reflect the unique context of Fintech services. The arrows in the graphic represent the relationships between the contributing elements, with the "+" and "-" marks representing positive and negative effects, respectively.

3. Research Methodology

3.1. Data Collection

The goal of the research was to have a look at the major factors that determine customer acceptance of financial technology products and services and their intent to use them. Customers from Commercial

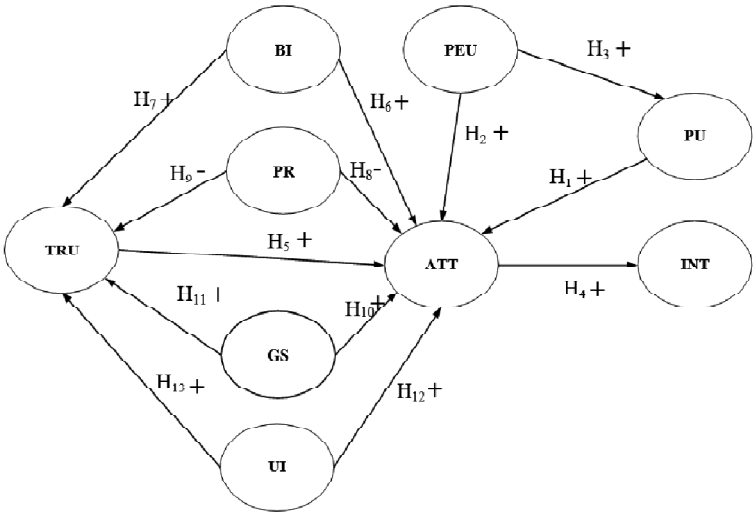

Figure 1: Research Model

Bank who used online banking, mobile banking, and other financial technology products and services regularly took part in the study. To collect data, bank employees distributed a questionnaire to randomly selected individuals using a Google Form. Participants were given information on Fintech services before the poll., including their purpose, associated risks, and other relevant details. These services, which include electronic banking, loans, and insurance, were characterized as new financial services that use modern technologies such as massive data and smartphone technology.

The questionnaire consisted of 31 items and covered demographic information as well as the assessment of financial technology facilities using a Likert scale. Out of the 587 responses received, 387 effective replies were analyzed, resulting in an appropriate reaction rate of 65.93%. Statistical analysis using Smart PLS 3.0 revealed certain demographic patterns, with most of the respondents (56.07%) falling in the 26 to 35 age range, indicating early acceptance of technology. A significant proportion (68.73%) of participants were frequent users, highlighting the current high rate of Fintech acceptance. Understanding the elements that determine their acceptance is critical for effective Financial technology integration in financial institutions.

3.2. Scale Development

This research integrated insights from both local and global scholars, adapting to match the specific features of financial technology facilities studied. (refer to Table 2). Constructs such as PU were derived from Lockett *et al.* and Huh *et al.*, while PEU drew from the research of Cheng *et al.* and Wang *et al.* TRU is influenced by the research of Chong *et al.* and Sanchez *et al.*, and BI is based on the research of Ha *et al.* and Ruparelia *et al.* Additionally, 'PR', 'GS', 'UI', 'ATT', and 'INT' have been research by Marakarkandy *et al.*, Grabner-Kr *et al.*, Zhang *et al.*, and Patel *et al.*

Table 1: Sample Characteristics

Variables		*Responses*	*%*
Sexual orientation	Male.	182	47.03%
	Female.	205	52.97%
Age	18–25	52	13.44%
	26–35	217	56.07%
	36–45	61	15.76%
	46–55	52	13.44%
	e"56	5	1.29%
Employ status	School child	11	2.84%
	Public Servant	47	12.14%
	B-School Employees.	64	16.54%
	Workers.	200	51.68%
	Businessman	21	5.43%
	Other.	44	11.37%
Education	SSC	35	9.04%
	HSC	79	20.41%
	UG	223	57.36%
	PG	51	13.18%
Income	below 2000	51	13.18%
	2k to 6k	210	54.26%
	6k to 10k	75	19.38%
	Above 10k	51	13.18%
Fintech service usage	Not Used	8	2.07%
	Irregularly	67	17.31%
	Frequently	266	68.73%
	Everyday Usage	46	11.89%

The survey contained different variables representing outside factors that influence the participants' perspectives, each having 2-6 dimensions variables. Respondents evaluated each dimension of a variable using a Likert scale, indicating their true opinions ranging from "strongly disagree" to "strongly agree." For data analysis and processing, the study applied (SEM), a statistical technique that explores relationships between variables through methods like multiple regression, path analysis, and confirmatory factor analysis. The 'Partial Least Squares' (PLS) parameter estimation method was chosen as it is appropriate for investigation research and model testing, not requiring a robust theoretical foundation for validation and explanation. Ruparelia, N., White, L., and Hughes, K. (2010) highlight the use of Smart PLS 3.0 for parameter estimation in this study.

Table 2: Measurement Instruments

Latent Variables	*Sources*
'Perceived Usefulness' (PU)	Lockett *et al.* and Huh *et al.*
'Perceived Ease of Use' (PEU)	Cheng *et al.* and Wang *et al.*
'Trust' (TRU)	Chong *et al.* and Sanchez *et al.*
'Brand Image' (BI)	Ha *et al.* and Ruparelia *et al.*
'Perceived Risk' (PR)	Marakarkandy *et al.* and Grabner *et al.*, Abdul, S. B., and Soundararajan, V. (2022).
'Government Support' (GS)	Marakarkandy *et al.*
'User Innovativeness' (UI)	Zhang *et al.*
'Attitude' (ATT)	Grabner *et al.*, Panda, P., Maharana, A. K., and Iqbal, S. A. (2021)
Intention (INT)	Marakarkandy *et al.* and Patel *et al*

4. Results

4.1. Cogency and Trustworthiness

The model's internal constancy trustworthiness, convergent validity, and discriminant validity were all evaluated using confirmatory factor analysis. Internal constancy trustworthiness refers to the degree of constancy or stability in measurement outcomes, which represents the dependability of the questionnaire questions. Composite reliability (CR) and Cronbach's alpha were employed to analyse the internal consistency of the data in this investigation. The sample's CR should be larger than 0.7, and 'Cronbach's alpha' should be better than 0.8, according to Fornell and Larcker's criteria. Faullant and Grabner-Kräuter (2008).

Table 3: Presents the Constructs, AVE, CR and Cronbach's Alpha

Variables / Constructs	*AVE*	*CR*	α
PU	0.680	0.894	0.84
PEU	0.755	0.902	0.837
BI	0.812	0.928	0.884
PR	0.767	0.908	0.851
GS	0.713	0.882	0.799
UI	0.844	0.915	0.815
TRU	0.827	0.905	0.793
ATT	0.83	0.936	0.897
INT	0.737	0.894	0.822

The statistical accuracy of the Proposed framework, incorporating both convergent and discriminant validity, is determined by how well it matches the survey data. Convergent validity evaluates correlations between indicators for a variable using the extracted average variance. (AVE) Patel and Patel (2018) composite reliability (CR) Poolthong and Mandhachitara (2009). and observable variable loadings Fornell and Larcker (1981). AVE values over 0.5 and observable variable loadings over 0.7 signify robust convergent validity, as seen in Table 3, affirming this study's constructs.

Discriminant validity ensures variables are distinct and not overly correlated. It's validated when the AVE exceeds the squared inter-scale correlation. Table 4 confirms favourable discriminant validity, with all AVE values surpassing the squared inter-scale correlation for every variable.

Table 4: Discriminant Validity of Variables

Variables	*PU*	*PEU*	*BI*	*PR*	*GS*	*UI*	*TRU*	*ATT*	*INT*
PU	0.821	-	-	-	-	-	-	-	-
PEU	0.738	0.871	-	-	-	-	-	-	-
BI	0.422	0.423	0.898	-	-	-	-	-	-
PR	-0.208	-0.166	-0.247	0.878	-	-	-	-	-
GS	0.501	0.51	0.499	-0.182	0.841	-	-	-	-
UI	0.291	0.357	0.407	-0.134	0.504	0.921	-	-	-
TRU	0.45	0.492	0.538	-0.367	0.564	0.488	0.906	-	-
ATT	0.58	0.582	0.566	-0.219	0.707	0.619	0.604	0.913	-
INT	0.515	0.549	0.579	-0.232	0.588	0.554	0.569	0.795	0.855

4.2. Hypotheses Testing

Following the completion of the reliability and validity assessments, the study moved on to an experiential examination of the financial technology facilities acceptance model. The structural equation model (SEM) was used to examine the sample statistical data, which is a statistical approach that uses A matrix containing the covariance for each variable and is a helpful instrument for analysing data with multiple variables. PLS 3.0 was used to check the hypotheses stated in this article, which gave standardised path coefficients () and t-values.

The statistical significance of the variables was determined using t-values. If the t-value reaches 1.96 at a confidence level of p 0.05, the value of the coefficient can be regarded as meaningful. A t-value greater than 2.58 suggests relevance at a p 0.01 level of confidence, whilst a t-value greater than 3.1 indicates significance at a p 0.001 level of confidence. The results of the testing of the hypotheses are shown in Figure 2.

The graph above depicts the results that show significant impacts on ATT for PU (= 0.176, t = 3.339). Similarly, BI (= 0.135, t = 2.852), TRU (= 0.103, t = 2.122), GS (= 0.318, t = 5.584), and UI (= 0.273, t = 6.322) are also considerably influenced. Given that their respective t-values surpass 1.96, these data confirm hypotheses one, six, five and ten. Furthermore, TRU serves as a go-between for the interactions amongst BI, GS, and UI.

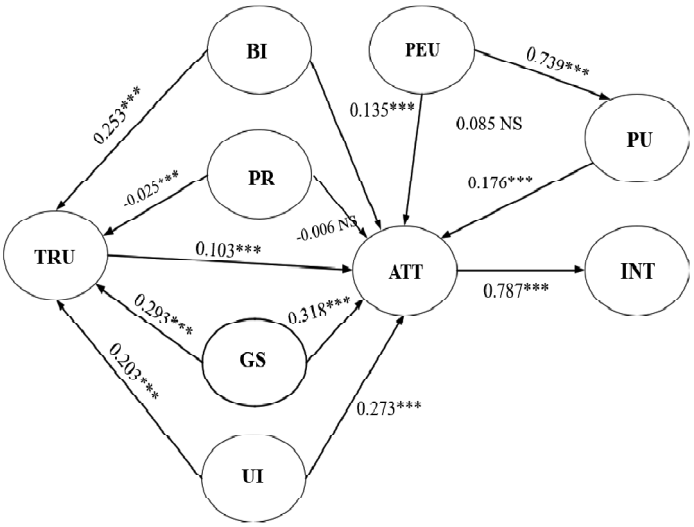

Figure 2: Results of the Proposed Research Model

BI (= 0.253, t = 4.925), PR (= -0.025, t = 6.251), GS (= 0.293, t = 5.625), and UI (= 0.203, t = 4.669) also obligated substantial effects on trust. The t-test exceeds 1.96 once more, verifying hypotheses H7, H9, H11, and H13.

Furthermore, PEU has a substantial impact on PU (= 0.739, t = 18.397), supporting H3. ATT has a substantial effect on (INT= 0.787, t = 25.410) with a t-value greater than 1.96, corroborating H4. However, (PEU= 0.085, t = 1.306) and (PR =-0.006, t = 0.204) had no substantial impacts on ATT since their t-values were > 1.96. As a result, two and eight are not supported.

5. Results Discussion and Conclusions

The Present research investigates the acceptance of financial technology facilities by bank customers, focusing on the factors that determine acceptance behaviour and its impact on the relationship between users and banks. The position of 'Perceived Usefulness' (PU), 'Trust', and 'User Interface' (UI) in the desire to utilize Fintech services is underlined, confirming the findings of Sikdar *et al.* In contrast to Marakarkandy *et al.*'s study, the development of General Satisfaction (GS) as a major predictive factor is found. Furthermore, this study supports the findings of Kesharwani *et al.*, since there are no significant relationships between 'perceived ease of use' (PEU), 'perceived risk' (PR), and the impact of services. The study's findings highlight many critical factors.

To begin, brand image, government aid, and user innovation all have a significant impact on Fintech acceptability, both through direct and indirect means through the influence of confidence. These variables have a significant impact on service uptake. Second, perceived risk undermines trust, which alters customers' perceptions towards Fintech services. Addressing perceived risk is critical for increasing trust and user engagement. Third, perceived simplicity of use does not affect Fintech uptake.

6. Limitations of the Study

The core purpose of this research work is to improve the TAM Model by including the idea of trust in Fintech services to simplify and predict the acceptance of these facilities by banking customers. An additional complete and nuanced opinion on the drivers of developmental purpose is offered by incorporating trust as a factor. This study's empirical investigation confirms the proposed paradigm. However, significant limitations in the influencing factors investigated in our study must be acknowledged. Psychological variables, such as social effects, have received less attention. Furthermore, a thorough risk assessment should consider several aspects, such as monetary menaces, confidentiality threats, and virtual safety fears. We may gather knowledge by performing a complete and effective evaluation that includes these factors.

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An Evaluation of Current Account Behaviour Amidst Globalisation

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Rupee exchange rate, Current account sensitivities, Intertemporal hypothesis, ARDL

JEL Classification
F3, F21, F32.

Abstract: The study analysed the current account response to international economic factors namely, oil price volatility, exchange rate of Indian rupee, trade openness, net foreign assets and home country inflation using data spanning 2001 Q1 to 2020 Q4. The study revealed that a hike in oil price volatility, net foreign assets and home country inflation leads to current account deficit increase. The main reason being the failure of intertemporal hypothesis for the Indian economy. The study concludes that for maintaining healthy current account position, rupee should be allowed for free conversion and trade barriers should be reduced to the minimum. Also, private saving should be encouraged to provide a buffer for elevated oil import bill and efforts should be made to cut the oil imports as far as possible.

1. Introduction

In the era of globalisation, maintaining macroeconomic stability especially in terms of current account balance position is the major challenge which is being confronted by almost all the economies. Exchange rate swings are the main cause behind macroeconomic instability following globalisation and resultant factors. As a consequence of globalisation, world has become totally interdependent in terms of fulfilling their respective needs for survival but simultaneously this integration has also created problems in the form of mounting current account deficit of economies. India is no exception; its current account deficit is also piling up year by year. The main reason behind this mounting current account deficit of India is its major chunk of imports in the form of oil and gold. Current account position of India has almost in all the years remained in deficit. For instance, current account deficit (CAD) was at $8.1 billion in last quarter of year 2020-21. India undergone through a strange current account surplus in 2020–21 subsequent to covid-19, however, this surplus got reversed again to deficit in 2021-22.

Exchange rate fluctuations mean all the swings and adjustments causing currency's appreciation or depreciation owing to changes in one currency value in relation to another currency. The constant hike in oil prices as is being generally experienced by almost all the nations and simultaneous rise in the demand for oil has further aggravated the problem of maintaining favourable current account balance position.

In the present study, for analysing economic openness, trade openness reflects globalisation. While giving due weightage to globalisation in the form of trade openness, other variables such as international oil prices, rupee exchange rate, net foreign assets, home country's inflation are being considered as major determinants of current account balance position.

2. Literature Review

In order to lay down the objectives of the study in a precise manner, a brief review of literature related to the problem being analysed is being presented in chronological order as below:

Baharumshah *et al.* (2003) focussed on persistent rise of imbalances in current account of four ASEAN nations namely, Malaysia, Thailand, Indonesia and Philippines for the years 1961 to 1999. For analysing the current account behaviour in these economies, the intertemporal budget constraint (IBC) approach is being employed. Using conventional ADF & PP unit root tests, Johansen's cointegration technique and Gregory Hansen cointegration approach, the study found that with the exception of Malaysia, strong evidence regarding the violation of intertemporal balancing model approach has been discovered for all the considered nations prior to the Asian financial crisis. On the contrary, significant co-movement among inflows and outflows in Philippines, Indonesia and Thailand has been observed throughout the post-crisis period. This eventually brings us to the conclusion that these nations' current account deficit was unmaintainable and failed to move towards external-account equilibrium.

Arouri *et al.* (2015) focussed on analysing the sensitivities of current account deficit in response to real exchange rate based on annual data series throughout 1975 to 2011. The study revealed that a rise in rupee exchange rate lowers current account imbalance and it further emphasised the disturbances in the form of productivity shocks, technological advancements and changes in consumer behaviour.

Garg and Prabheesh (2017) analysed India's current account behaviour after the period of liberalization and detected that whether it is subjective to external factors through an intertemporal model on the quarterly data series ranging from 1997–98Q1 to 2012–13Q2. The study tested hypotheses such as Twin-Deficit Hypothesis in comparison to hypothesis of Ricardian Equivalence and Feldstein-Horioka. The findings based on ARDL bound testing displayed that Indian current account balances are affected by external determinants viz., oil prices volatility and foreign income and also by some macroeconomic factors such as real effective exchange rate, fiscal balance and private investment. It has been discovered that the results are in support of the twin-deficit theory while contradicting Ricardian equivalence theory.

Behera and Yadav (2019) explored the significance of current account deficit from the different perspectives emphasizing on its financing structure, behavioural patterns, sustainability in context of India employing several unit root tests (both with or without structural breaks), Johansen-Juselius cointegration test, Vector Error Correction approach and Toda and Yamamoto Granger non-causality

approach to perform empirical analysis. The evaluation brings out that inflation, trade openness, terms of trade, relative income growth, fiscal deficit, real deposit rate and age reliance factor all contribute to India's current account imbalance. The analysis further highlighted that the decline in corporate investments and household savings were major factors contributing to the widening of the CAD.

Riaz et al. (2019) investigated the influence of nominal effective exchange rate, trade openness, domestic relative income and net foreign assets on a subset of South Asian economies from 1984 and 2015 employing Johansen-Juselius cointegration technique and Vector Error Correction Method. The economies selected for the study are India, Bangladesh, Pakistan and Sri Lanka represent the four major economies in SAARC group of nations. The current account model employed throughout this study is aligned with the saving-investment model. The study used intertemporal modelling to figure out the variables that affect current account in considered South Asian economies. The paper revealed that for considered economies, there is a significant long-term association between trade openness, domestic income, net foreign assets and current account.

Saxena and Gupta (2020) examined long-term and short-term influence of real exchange rate and consequential volatility impact on exports from India to US applying autoregressive distributed lag bound testing approach depend upon quarterly data from 1991Q1 to 2018Q4. The study observed that aggregate real exports from India are quite sensitive and responsive to real exchange rate in long-run while comparatively lesser sensitive in short-run. The paper further highlighted that economic impact is positively and significantly related to level of exports made. But, Indian exports to US does not indicate any significant association with exchange rate volatility. As a whole, the study concluded that exports are predominantly influenced by factors other than real exchange rate volatility.

Rani *et al.* (2022) observed the influence of currency futures on volatility of Indian rupee exchange rate based on Indian rupee vis-a-vis US dollar, Euro, UK pound and Japanese yen covering a period from February 2002 to February 2020. The results of GARCH (1,1) model brings out that volatility persists for considered bilateral currency's exchange rates. The study found that the volatility of returns from exchange rate during pre and post currency futures period is statistically significant and higher during pre-futures period for USD-INR and GBP-INR while it has been discovered to be higher in post future era for EUR-INR and JPY-INR. The authors emphasised that volatility persistence between currency futures and spot markets should be taken into account at the time of framing hedging strategies.

For making an in-depth analysis of current account balance position, numerous determinants have been considered and explained at length in earlier studies, generally for developed economies. However, determinants for current account balance for the economies like India have not been discussed elaborately in the existing literature. Having identified the research gap, an effort is being made to verify the behavioural impact of selected variables, viz., rupee exchange rate, volatility of oil prices, trade openness, net foreign assets and wholesale price index on current account deficit of India.

3. Objectives of the Study

The major thrust of the dissertation is to achieve the below mentioned objectives:

1. To analyse the behaviour of current account in relation to selected external sector variables and home country inflation.

2. To observe the short run drivers incorporating long run equilibrium among the endogenous factors.

4. Data Description

For assessing the behaviour of CAD in the era of globalisation, quarterly data spanning 2001 Q1 to 2020 Q4 have been taken into account. The observations on CAD, rupee exchange rate (RER), trade openness (TOP), net foreign assets (NFA) and wholesale price index (WPI) have been obtained from official website of RBI. The oil prices have been extracted from Energy Information Administration's website. CAD to GDP ratio has been considered while trade openness has been expressed as ratio of overall imports & exports to GDP. For GDP series from 2001 to year 2010, year 2004-05 is the base year. However, base year for GDP from 2011-2020 is 2011-12. So, GDP has been deflated in the following manner:

$$GDP\ Deflation = \frac{Nominal\ GDP}{Real\ GDP}$$

Subsequently, GDP data series from year 2001-2010 has been changed using new base year viz., 2011-12. Hence, final GDP series has been taken with single base year i.e., 2011-12. Similarly, in order to calculate fluctuations in oil prices, standard deviation volatility viz., SDV has been based on measures proposed by Sotoudeh and Worthington (2016) & Elder and Serletis (2010), which followed the below mentioned two steps. Firstly, changes in oil prices have been estimated using following formula:

$$r_t = \log(dop_t) - \log(dop_{t-1}) \quad (1)$$

where dop_t represents daily crude oil price (spot) for the current period, dop_{t-1} is the daily spot crude oil price of previous period and r_t is the daily change in the crude oil price (spot values). Then, following formula has been used to determine oil price volatility index:

$$SDV_t = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}\left\{r_t - \frac{1}{T}\sum_{t=1}^{T} r_t\right\}^2} \quad (2)$$

where T is number of trading days per quarter.

Further, Net Foreign Assets (NFA) as a proportion of GDP has also been considered. The expected association between NFA and current account deficit is considered as negative when based upon saving-investment approach. However, in the free exchange rate era the sum total of current along with capital account must equate zero till the point a nation could tolerate larger trade gap for an enlarged period as a result of high concentration of NFA and could still not be considered as insolvent (Yang, 2011). This implies positive association between NFA and current account deficit.

Wholesale Price index (WPI) – Undoubtedly, home country inflation is not a basic influencer of CAD, however, particularly in case of India, higher inflation raises saving and investment gap. Saving ability of households is deteriorated by higher inflation rates due to the tendency of the

people making more of the unproductive investments. It is due to this reason that inflation has also been considered as a determinant of CAD. Considering this, WPI has been taken as a measure of inflation in this paper.

5. Research Methodology

5.1. Unit Root Tests

In order to verify stationarity of time series observations, Augmented Dickey Fuller (ADF) test (1979) and Phillips-Perron (PP) test (1988) has been applied.

5.2. Autoregressive Distributed Lag Modelling (ARDL)

For assessing long-run and short-run interlinkages and sensitivity of current account in response to selected determinants in the globalised world, ARDL model established by Pesaran and Shin (1999) and Pesaran et al. (2001) has been employed. Cointegration has been checked through bounds test. If cointegration is detected, subsequently long-run ARDL coefficients for the independent factors are obtained viz., OPV, RER, TOP, NFA and WPI by means of equation (3) and equation (4), respectively:

$$CAD_t = \beta_0 + \sum_{i=1}^{p} \beta_1 CAD_{t-1} + \sum_{i=1}^{p} \beta_2 RER_{t-1} + \sum_{i=1}^{p} \beta_3 OPV_{t-1} + \sum_{i=1}^{p} \beta_4 TOP_{t-1} + \sum_{i=1}^{p} \beta_5 NFA_{t-1} + \sum_{i=1}^{p} \beta_6 WPI_{t-1} + u_t \quad (3)$$

$$\Delta CAD_t = \lambda_0 + \sum_{i=1}^{p} \lambda_1 \Delta CAD_{t-1} + \sum_{i=1}^{p} \lambda_2 \Delta RER_{t-1} + \sum_{i=1}^{p} \lambda_3 \Delta OPV_{t-1} + \sum_{i=1}^{p} \lambda_4 \Delta TOP_{t-1} + \sum_{i=1}^{p} \lambda_5 \Delta NFA_{t-1} + \sum_{i=1}^{p} \lambda_6 \Delta WPI_{t-1} + \theta ECM_{t-1} + \mu_t \quad (4)$$

The long-term behaviour as obtained through equation (3) and here β_0 stands for constant, β_1,β_2, β_3, β_4, β_5 and β_6 signify long run coefficients for the regressors and μ_t means error term. Here in this system, value of F-statistic confirms the existence or non-existence of cointegration. If F value is less than lower bound range, then no cointegration exists among the series undertaken. However, if F-statistic turns higher than upper bound range, cointegration exists. If F-statistic remains within upper and lower critical range, it implies indecisive conclusion.

Likewise, in equation (4), λ_0 is constant, λ_1,λ_2,λ_3, λ_4, λ_5 and λ_6 are short-run dynamic coefficients and $\backslash$ symbolises error correction term (ECT_{t-1}), which signifies the rate of correction for long-run equilibrium required to restored subsequent to any disturbance in the preceeding period.

6. Results and Discussion

At the outset, we used unit root tests for assessing stationarity property of the series undertaken.

Table 1: ADF and PP Unit Root Tests

	Augmented Dickey Fuller Test (ADF)				*Phillips-Perron test (PP)*			
	Levels		*Ist Difference*		*Levels*		*Ist Difference*	
Series	*Constant*	*Constant & Trend*	*Constant*	*Constant & Trend*	*Constant*	*Constant & Trend*	*Constant*	*Constant & Trend*
CAD	0.0011*	0.0063*	0.0000*	0.0000*	0.0024*	0.0105**	0.0001*	0.0001*
RER	0.3892	0.0052*	0.0000*	0.0000*	0.3824	0.0233**	0.0000*	0.0000*
OPV	0.0000*	0.0000*	0.0001*	0.0001*	0.0000*	0.0000*	0.0001*	0.0001*
TOP	0.1817	0.4048	0.0000*	0.0000*	0.2212	0.4943	0.0000*	0.0000*
NFA	0.9858	0.9764	0.0000*	0.0000*	0.8767	0.8445	0.0000*	0.0000*
WPI	0.1201	0.1786	0.0000*	0.0000*	0.1896	0.1219	0.0000*	0.0000*

*, ** and *** depicts 1%, 5% and 10% level of significance respectively.

Table 1 portrays the results of ADF and PP unit root test which reveal that CAD, RER and OPV are stationary at levels I(0) whereas TOP, NFA and WPI are non-stationary at levels I(0) and stationary at I(1) (Kaur & Kulaar, 2022). These unit root tests explored that a few of series are stationary at levels whereas other being stationary at first difference. Consequently, the condition for ARDL model has been satisfied since few of the series are I(0) and few are I(1) and none of the series is integrated of order two viz., I(2) or higher.

Table 2: Normalized CAD Equation based on Bounds Test

Series	*F-Statistic*	*P-value*	*Conclusion*
F_{CAD} (CAD/ RER, OPV, TOP, NFA, WPI)	9.528*	0.0000	Cointegration
Critical Statistic	Lower Bound	Upper Bound	
1% Significance level	4.29		5.61
5% Significance level	3.23		4.35
10% Significance level	2.72		3.77

Table 2 exhibits cointegration results based on bounds test which bring out that null hypothesis of absence of co-integration stands rejected since F value i.e., 9.528 is greater than the upper critical bound range at 1%, 5% and 10% level of significance. Thus, there exists cointegration and long-run association among variables taken into account to analyse the response of CAD with respect to selected

variables. Moving on, ARDL model (1,0,1,1,1,1) has been specified based upon equation (3) which gives long and short-run coefficients of regressors.

Table 3: The Values of Long-run Parameters for CAD

Series	*Coefficient*	*S.E.*	*t-Statistic*	*P-value*
C	0.0862**	0.0369	2.3363	0.0223
RER	-0.0172**	0.0077	-2.2092	0.0303
OPV	0.1063***	0.0551	1.9308	0.0574
TOP	-0.4587*	0.0735	-6.2409	0.0000
NFA	0.0598**	0.0312	1.8789	0.0410
WPI	0.7120*	0.1468	4.8489	0.0000
R^2	0.7253	AIC		-8.9342
Adj. R^2	0.6941	SIC		-8.8534
F-stat.	57.037*	DW Stat.		1.8854
P-value (F-stat.)	0.0000			

*, ** and *** depicts 1%, 5% and 10% level of significance respectively.

Long-run ARDL model could be presented in the form of an equation as below:

$$CAD = 0.0862^{*} - 0.0172^{*}(RER) + 0.1063^{*}(OPV) - 0.4587^{*}(TOP) + 0.0598^{**}(NFA) + 1.7120^{*}(WPI) \quad (5)$$

Table 3 exhibits that exchange rate and trade openness have negative impact on current account deficit and are both statistically significant at 5% and 1% level of significance respectively. A hike in exchange rate of Indian rupee i.e., declining rupee has favourable impact on current account deficit which is theoretically true. The reason behind this tendency of current account deficit getting improved with the depreciation of Indian rupee is on account of Indian foreign trade pattern i.e., India's exports being elastic while imports being inelastic which are generally in the form of oil. Rupee exchange rate is thus significant contributing factor of current account position of India and this rupee should be made freely convertible keeping a concern for severe swings by means of RBI controls in the form of interventions as and when needed. Trade openness representing globalisation level of Indian economy also has negative influence on India's current account position and the coefficient value (-0.458) highlights that 45.8% of current account balance sensitivities are due to only trade openness. On the basis of this, we can conclude that trade openness improves the health of current account position and further provides support to the globalisation reforms. Since India is progressing towards globalisation, it could further improve current account balance position by resorting to increased proportion of exports to other nations.

Considering other side of the coin, it could be observed that oil price volatility has a negative impact upon current account deficit, implying that oil price hikes disturb the current account balance position of India and contribute to mounting deficits. These findings with respect to oil price volatility

impact on CAD has an important connotation that Marshall-Lerner hypothesis and J-curve expenditure switching behaviour fails in case of India which in turn signifies that as far as Indians are concerned, private savings fall short of hikes in oil import bills. Furthermore, it can be said that fiscal deficit is closely linked to current account position. The intertemporal hypothesis is somehow similar to Marshall-Lerner hypothesis and J-curve which implies that oil importers raise the level of savings in order to provide a buffer for the higher oil prices internationally. But this intertemporal hypothesis is not applicable in India due to its inelastic oil imports and further favouring the present consumption over the savings. All this contributes to mounting current account imbalance.

Further, NFA and WPI are positively and significantly associated with CAD. It has been observed that current account is more responsive to change in WPI in comparison to change in NFA since the coefficient of WPI is higher than the coefficient of NFA. As far as NFA is concerned, as per intertemporal approach, positive association between NFA and current account can be considered like that economies with high concentration of NFA can run current account deficit for an enlarged period and could still be in solvent mode.

Likewise, in case of WPI, positive and significant association between home country inflation i.e., WPI and CAD has been observed. It implies that rise in the level of inflation in India widens savings and investment gap and jeopardises saving ability of individuals. The reason behind this being individuals resort to unproductive investments which further contribute to mounting current account deficit of Indian economy.

The adjusted R^2 (0.69) implies that 69% of the swings in current account deficit are represented by the determinants so considered. Further, model is free from autocorrelation as Durbin-Watson value is 1.885 and close to 2.

Table 4: Short-run Drivers and Error-Correction Term

Series	*Coefficient*	*S.E.*	*t-Statistic*	*P-value*
D(RER)	-0.0120**	0.0056	-2.1280	0.0368
D(OPV)	0.0182	0.0311	0.5865	0.5593
D(TOP)	0.1773***	0.1021	1.7356	0.0869
D(NFA)	0.0104***	0.0059	1.9578	0.0510
D(WPI)	0.7250*	0.1747	4.1503	0.0000
ECT (-1)	-0.7009*	0.0909	-7.7050	0.0000

*, ** and *** depicts 1%, 5% and 10% level of significance respectively

Table 4 illustrates short-run drivers based upon ARDL specification (1, 0, 1, 1, 1, 1). Here, it can be clearly witnessed that error correction term (ECT_{t-1}) is negative and significant (-0.70). It can be concluded that disturbance in the preceeding quarter is being rectified at the rate of 70% in the present quarter, implying the restoration of long-run equilibrium by short-run drivers.

Table 5: Diagnostic Test

Diagnostic Test	*F-value*	*P-values*
Normality test	3.2988	0.1921
Breusch-Godfrey LM Test of Serial Correlation	0.5099	0.6892
Breusch Pagan Godfrey Test of Heteroscedasticity	1.2235	0.3044
Ramsey RESET Test	2.2668	0.1360

Table 5 provides the evidence that the selected ARDL model is free from autocorrelation, heteroscedasticity and specification error and the observations are normal. All this clearly shows that the selected model is the best fit.

CUSUM test for Stability Checking

To verify if the coefficients of the estimated model are consistent, the figure of CUSUM test at 5% level of significance has been obtained and displayed in Figure 1. It is clear that residuals obtained from the model are free from structural instability.

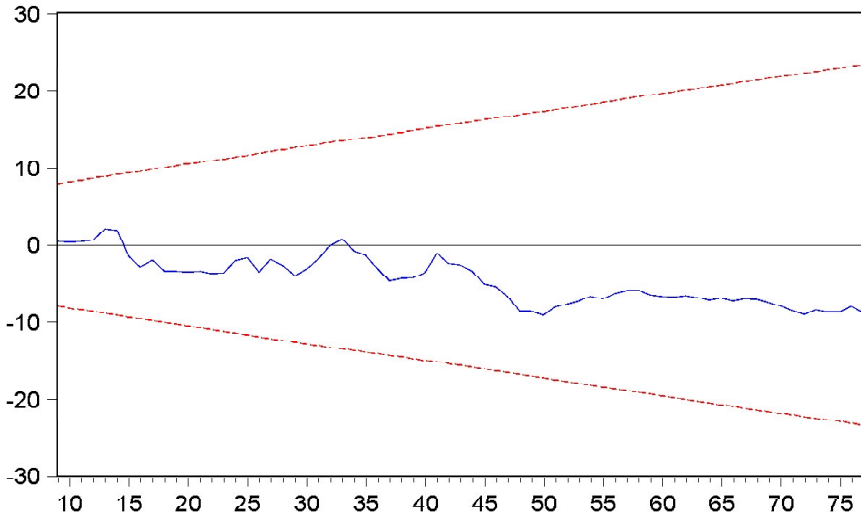

Figure 1:. Figure of Cumulative Sum of Recursive Residual (CUSUM)

7. Conclusion

The paper explored the impact of globalisation on current account balance position of India considering the determinants as exchange rate of Indian rupee, volatility of oil prices, trade openness, net foreign assets and home country inflation in the form of wholesale price index based on data series spanning 2001 Q1 to 2020 Q4 and using ARDL model. In the era of globalisation it is really hard and challenging

to maintain current account balance within the tolerable limits. This paper highlights various determinants of current account balance position for the Indian economy. The paper brings out that exchange rate of Indian rupee and trade openness have a favourable impact on current account position of India which further implies that rupee could be allowed for free conversion and trade barriers should be cut down to the minimum. By resorting to a greater degree of globalisation, India could go a long way in reducing the current account deficit by raising the level of exports being made.

Further, oil price volatility, net foreign assets and home country inflation are directly linked with mounting current account deficit since the coefficient is positive and significant. As a result of hikes in oil prices globally, oil import bills are raised to a level where current account balance is disturbed. The main reason being that in India intertemporal approach fails which highlights that when oil prices jump, the oil importers make more savings to provide buffer for the increased oil bills but that is not true in case of India. Due to positive impact of oil price volatility on current account deficit, it could be inferred that in India present consumption is favoured over savings and as a consequence of this, oil importers end up with oil bills which fall short of buffer in the form of savings. Lesser saving and higher consumption further aggravates the problem of fiscal deficit which ultimately contributes current account deficit.

Moving on, net foreign assets and home country inflation are positively and significantly associated with current account deficit. It has been observed that current account is more responsive to change in home country inflation in comparison to change in net foreign assets since the coefficient of wholesale price index is higher than the coefficient of net foreign assets. As far as net foreign assets is concerned, as per intertemporal approach, positive association between net foreign assets and current account can be considered like that economies with high concentration of net foreign assets can run current account deficit for enlarged period and could still be solvent. Likewise, in case of wholesale price index, positive and significant association between home country inflation i.e., wholesale price index and CAD has been observed. It implies that rise in the level of inflation in India widens savings and investment gap and jeopardises saving ability of individuals. The reason behind this being individuals resort to unproductive investments which further contribute to mounting current account deficit of Indian economy.

A few suggestions following these observations are, for instance, rupee should be made freely convertible, keeping a concern for the severe swings through RBI controls in the form of interventions as and when needed. Also, the trade barriers should be cut to minimum in order to raise the level of exports being made and oil import should be reduced. Further, based on findings of paper, it can be inferred that persistently rising net foreign assets and home country's inflation will lead to the worsening of current account position due to mounting pressure on current account balance of India.

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Budgeting for Women Empowerment: The Experience of Odisha

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JEL Classification

C02, H61, J16

Abstract: The paper examines the impact of gender budgeting practice on women's empowerment in Odisha. Analysis of data reveals that the component, pattern, and growth of spending on schemes for women are moving in the desired direction till 2019-20, but, in 2020-21 the state of affairs is disturbed on account of COVID-19. In the Budget 2022-23 and 2023-24 more funds and new schemes have been initiated, consequently different indicators of Gender Budget are on the path of correction. By analysing data on the socio-economic-political performance of women over the period, it is observed that perceptible progress in the status of women occurred in Odisha, which may safely be ascribed to gender budgeting practice in the state.

1. Introduction

Women have a vital role to play in the overall progress of the country as they constitute around half of the human resources of a nation. Therefore, they are fairly important in society, irrespective of the class to which they belong. In the words of Mahatma Gandhi, *"There is no occasion for women to consider themselves subordinate or inferior to men"*. But, historically, either by law or by custom, they are discriminated and marginalised at every level of society. Eventually gives a lower status to women in social participation, economic activities, legal matter, decision making and access to education as compared to their male counterparts. Gender difference is well documented in the literature (England and Farkas, 1986; Padavic and Reskin, 2002; Lariviere *et al*, 2013; Misra, 2015; Malhotra, 2015; Ucal *et al*, 2015; Winchester and Browning, 2015; Lal, 2016; Snipp and Cheung, 2016.). However, the concept of the status of women has undergone a great deal of change over the time. It is believed that gender inequality perpetuates inefficiency in economic activity and creates incoherence in the social setup. Hence, quite detrimental to the development process of an economy. At present it has been widely accepted that gender equality

is essential for achieving human development and economic growth. A number of steps have been taken by the government over the period to improve the conditions of girls and women with a special focus on gender equality and women's empowerment (WE).

To achieve gender equality and for mainstreaming gender, 'Gender Budgeting' (GB) can play a pivotal role. It is a powerful tool for achieving gender mainstreaming so as to make sure that the benefits of development reach women and men equally. Taking this into account, GB is considered as a vehicle to foster the requisite allocation of public resources to be made for promoting gender equality.

2. Review of Literature

Australia is the first country in the globe to start gender budgeting in 1984. In 1995, South Africa and Philippines followed the foot print. In South African countries, viz., Ugandan and Tanzanian governments worked together with the civil societies to carry on the activities for implementation of 'Gender Budgeting' practice. Similar experiences can be seen in Latin America (Elson, 2004; Kapungu, 2008). Albania has a system of appointing 'gender equality employees' in every line ministry who collect and analyze "data, particularly sex-disaggregated data," and conduct "gender analysis to inform local policy development" (Kristin *et al*., 2012). In Italy, Gender Responsive Budget (GRB) was started at the local government level, which was later moved in an upward way to district / province / national level. Ecuador has given Gender Responsive Budget (GRB) as the highest possible level of legal recognition (Fundar, 2013). Maruzani *et al* (2012) made an analysis of GRB initiatives of Zimbabwe, Rwanda, Mozambique and Tanzania. Authors have cited success stories of gender budgeting initiatives in such African countries to show how gender budgeting can be used as a tool for engendering macroeconomic policies. Okwuanaso and Erhijakpor (2012) examined the way in which the government can use gender budgeting to address gender inequality, poverty and unemployment in Nigeria. Now, over 90 countries have experimented the practice of gender budgeting with some form or the other (OECD, 2014).

Gender Budgeting was first introduced in the Union Budget of India, 2005-06. Subsequently, different State Governments and Union Territories of Indian union have introduced Gender Budgeting. By March 2021, except Goa, Haryana, Chandigarh, Meghalaya, Ladakh, Mizoram, Puducherry and Sikkim (6 states and 3 UTs) all other states and UTs have adopted gender budgeting system (MW&CD, GoI, 2021). Researchers like, Mishra and Jhamb (2009), Mishra & Sinha (2012) found that gender budgeting statements suffer from flaws in methodology and women are accorded low priority in government spending on development. However, study by Jhamb and Mishra (2015) observed that there are number of positive developments, such as, changes in select planning and budgeting processes and creation of gender budget cells. But, restricted reach of GRB and stagnant or even declining allocations for the gender agenda are some of the stumbling blocks of 'Gender Budgeting' practice in India.

Several recent studies provide an overview and assessment of the success of gender budgeting efforts at the state level in India (Centre for Budget and Governance Accountability, 2012; Joshi, 2013; Ministry of Women and Child Development, 2015). These studies indicated that state governments have implemented gender budgeting using a variety of approaches. Some of these approaches draw on a state policy for gender-related goals and including Gender Budget Statements in the State Budget.

The result is not uniform for all the states. Stotsky and Zaman (2016) found that states adopted gender budgeting have made progress on gender equality in primary school enrolment, though its implications for fiscal spending is ambiguous.

Odisha is the first state in India to introduce the practice of 'Gender Budgeting' system in 2004-05. This was started by introducing Women Component Plan (WCP) with a mandate of a minimum 30 percent of fund be allocated for the benefit of women. The Annual Plan Document of the year 2004-05 covers WCP in seven sectors of the Government of Odisha. However, weak institutional arrangements and inadequate capacity building, gender budgeting was not taken off as expected. The first Gender Budget Statement (GBS) was published in 2012-13 covering the schemes and programmes exclusively meant for women, i.e., 100 percent Women Centric Programmes and Schemes only (Part-A of GB). Subsequently, in 2016-17 the Gender Budget Statement is prepared by including the schemes and programmes that constitute at least 30 percent or more allocation made for women and girls (Part-B of GB) along with the 100 per cent women centric programmes. The first ever full-fledged Gender Budget Document entitled "Gender Budget and Child Budget" placed in the Odisha Legislative Assembly along with other budget documents for the fiscal year 2019-20 and continues thereafter till date. The Gender Budget 2023-24 is sixth in the series.

In a Policy Brief, Centre for Youth and Social Development mentioned emphatically that given the absence of well thought-out and clearly laid down methodology to capture intangible benefits, it is really difficult to point out relevant schemes and the expanses thereof to be covered under Part-B. Further, the schemes having directly evident benefits coupled with the non-availability of sex-disaggregated data makes the accounting system cumbersome. On account of these (reasons) there is a lack of clarity among the officials on the amounts to be cited as allocation under Part-B of the Gender Budget (CYSD, 2017). Pati (2018) examined the problems associated with various government departments for proper implementation of the gender budget and identify the gender gap for different schemes. OXFAM India (2018) hailed the progressive gender-centric socio-economic policy measures adopted by the Government of Odisha and urged to create an appropriate socio-economic environment for the progress of women. In the context of gender budgeting, A.K. Mehta (2020) mentions that the State of Odisha has an edge over others and the state performs better in many counts.

This brief review highlights the implementation of GB practice at the national and state level. Present study attempts to analyses the implementation of GB in the state of Odisha and its impact on gender mainstreaming.

An attempt has been made in this article to examine two interrelated aspects of GB practice in Odisha, such as, tracking the level, pattern and composition of allocation under Gender Budget and investigating the impact of gender budgeting practice on socio-economic-political advancement of women.

3. Research Methodology

3.1. Data, Sample Area and Time Frame

To examine the stated objectives, we have used the data collected from secondary sources, viz., Gender Budget Statement, Government of Odisha (different years); Economic Survey, Government of Odisha

(different years); the Odisha State Report of National Family Health Survey (NFHS), Round 3, 4 and 5; Periodic Labour Force survey report, MoSPI; AISHE Report 2020-21 and PRS Legislative Research.

The study area is the state of Odisha. The study period ranges from 2010-11 to 2023-24.

3.2. Methods

Simple statistical tools like average, percentage, growth rate have been used to study and analyse data. The level of public expenditure on women centric programmes in Odisha is ascertained from the values of total allocation under gender budget for Part A and Part B at current and constant prices. So far as trend is concerned, we have employed growth rates, i.e., Compound Annual Growth Rate (CAGR) and Average Annual Growth Rate (AAGR) by using the formula as mentioned below. To have a greater insight into the analysis, department-wise allocations for Gender Specific and Gender Sensitive Budgets are examined over the period. We have inferred the composition of gender budget from absolute and percentage distribution of allocations across types of expenditure and the sources of funding. Finally, the impact of Gender Budget on women empowerment is studied with the support of data from NFHS.

$$AAGR = \left(\frac{1}{t}\right) * Ln \frac{Value\ in\ the\ Terminal\ Year}{Value\ in\ the\ Initial\ Year}$$

$$CAGR = \left(\frac{Value\ in\ the\ Terminal\ Year}{Value\ in\ the\ Initial\ Year}\right)\frac{1}{t} - 1$$

Where, 't' represents Time Period.

4. Data Analysis and Interpretations

4.1. Gender Budget Allocation in Odisha

Initially GB covers only Part A schemes, later on in 2015-16 Part-B was added with Part-A to have a complete picture of GB. For two consecutive years 2015-16 and 2016-17 Revised Estimates were retrospectively culled to form a part of GBS 2016-17 and 2017-18 respectively. However, with the regular publication of Gender Budget documents the actual GB figures are reported from 2017-18 onwards. Hence, GB data prior to and posterior to 2017-18 are not strictly comparable but for a synoptical analysis we have made it so. Further, an in-depth analysis is adopted for the period 2017-18 to 2023-24. Three reasons are put forth for this: (1) Plan/ Non-Plan division is dispensed with Administrative Expenditure, Programme Expenditure, Disaster Response Fund and Transfer from States; (2) GB allocation covers both Part-A and Part-B; (3) all three data sets viz., Actual Figure, Budget Estimate and Revised Estimate are reported regularly.

The budgetary provision for schemes under 100 per cent, 30 percent and the total amount of spending, their respective percentages and growth rates from the year 2010-11 to 2023-24 along with per capita allocation for women in Odisha are shown in the table (Appendix-I).

The table reflects that the total expenditure on women-centric schemes is only Rs. 0.96 billion in 2010-11 and increased continuously up to 2015-16, thereafter for two consecutive fiscal years it depicts a downturn, but again picks up to touch a high of Rs. 475.82 billion in 2019-20. In the year 2020-21 and 2021-22 the total gender budget allocation has declined, but it again recovers in the year 2022-23 and 2023-24 i.e., Rs. 561.09billion and 618.31billion respectively.

Growth of allocation under Part-A exhibits an oscillating trend. 2015-16 records a very high growth rate whereas a negative growth rate in subsequent year. A similar trend is also reflected in allocation of Part-B. CAGR and AAGR of expenditure under Part-A are 37.04 & 31.51 and Part-Bare 6.33 & 6.13 respectively. So far as percentage of allocation is concerned Gender Sensitive Budget has a lion share. The latest position reveals that Gender Sensitive Budget constitute 90.65 percent (2023-24 BE) of the GBS of Odisha.

To eliminate the price hike GB allocation is expressed at constant prices with the base year 2011-12. Regarding Per Capita Expenditure (PCE) per annum for women at constant prices, it is calculated as Rs. 52.80 in 2010-11 improves to an amount of Rs. 14354.89 in 2023-24, even though, there is a fall in 2015-16 and 2020-2. The average PCE per annum for women is Rs. 8420.74 at constant prices during the entire period of reference.

GB allocation of Odisha over the period 2010-11 to 2023-24 is shown in a graphical manner in Chart 1 (Part-A I in Panel A & Part-B in Panel B) given below.

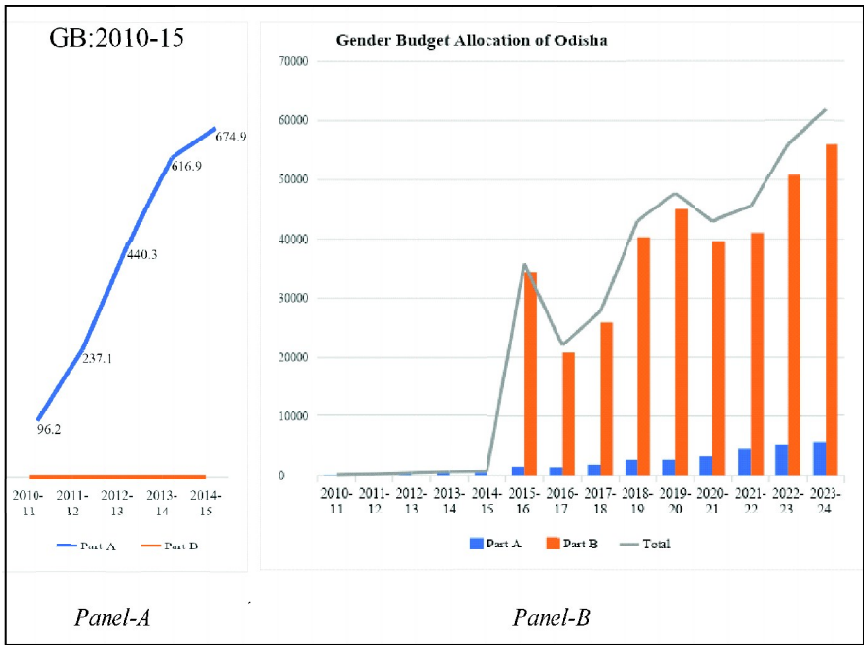

Figure 1: Gender Budget Allocation of Odisha

Source: Compiled by Authors

4.2. Gender Budget as a percentage of GSDP and Total Budget

Table 1 displays the total expenditure related to Gender Budget as a percentage of Gross State Domestic Product (GSDP) and Total Budget (TB) of Odisha during the financial year 2010-11 to 2023-24. Data reveals that the overall quantum of Gender Budget as a percentage of GSDP and TB continues to rise from 2010-11 to 2019-20 with an exception 2016-17. From 2019-20 onwards both these indicators decline continuously, baring a marginal improvement of Gender Budget as a percentage of GSDP in the year 2022-23. The trend of decline is mainly ascribed to COVID-19 and its aftermath effect. In case of TB, 2015-16 is taken as a significant year because Gender Budget as a percentage of TB records an exorbitantly high figure i.e., nearly 45 times as compare to previous year. This is due to the introduction of 'Gender Sensitive Budget' in the year 2015-16. Thereafter, it indicates a fluctuating trend and declined from a high of 45.17 percent in the year 2015-16 to a low of 26.88 percent in 2023-24. Ahead of 2019-20 Gender Budget as a percentage of TB shows an uninterrupted declining trend.

Table 1: Gender Budget as a Percentage of GSDP and TB

Year	*GB as a % of GSDP*	*GB as a % of TB*
2010-11	0.05	0.27
2011-12	0.10	0.56
2012-13	0.17	0.93
2013-14	0.21	1.10
2014-15	0.21	1.01
2015-16 *	10.88	45.17
2016-17 *	5.64	25.47
2017-18	6.32	28.52
2018-19	8.61	37.68
2019-20	8.94	38.01
2020-21	8.06	34.58
2021-22	7.08	29.56
2022-23 *	7.33	28.05
2023-24 #	7.15	26.88

Note: '*' Represents Revised Estimates, '#' Represents Budget Estimates and all other figures are Actuals.

Source: Calculated by the Researcher; original data taken from the Budget Documents, Government of Odisha.

4.3. Department wise Allocation under Gender Budget

As mentioned earlier an in-depth analysis is adopted for the period 2017-18 to 2023-24 covering 15 and 35 departments under Part-A and Part-B of GB respectively.

Information about the percentage of allocation in the top 5 departments of Part-A is shown in Table 2. Women & Child Development (W & CD) department tops the list with a share of two-thirds

of the budget. But in 2023-24 Mission Shakti received the highest share of financial allocation (which was carved out from W & CD in 2022-23). The department of Health & Family Welfare (H & FW) has the next largest share of allocation followed by Social Security & Empowerment of Persons with Disabilities (SSEPD), yet the allocation under both these departments is in a fluctuating downward trend over the years. The inconsistent declining percentage of allocation was also noticed in the SC, ST Development department which reduced from 11.26 percent in 2017-18 to 0.40 percent in 2023-24. In 2020-21 and 2021-22 the second-best percentage of share goes to the department of Panchayati Raj, i.e., around 25 percent, although expenditure was neither made prior to nor posterior to the concerned years. These 5 departments cover around 95 percent of the total Gender Specific Budget.

Table 2: Top 5 Departments in the Allocation of Gender Specific Budget (value in %)

Year	*WCD*	*MS*	*H & FW*	*SC, ST Dev*	*PR*	*SSEPD*	*Total*
17-18 AC	44.97		19.89	11.26	0.77	10.98	87.87
18-19 AC	64.62		18.49	4.54	0.00	6.58	94.22
19-20 AC	64.68		19.38	0.92	0.00	13.13	98.11
20-21 AC	47.09		14.91	3.61	24.58	7.77	97.96
21-22 AC	49.43		15.52	1.84	24.40	7.02	98.21
22-23 RE	38.85	37.55	13.78	0.49	0.00	6.02	96.69
23-24 BE	33.32	41.57	14.58	0.40	0.00	5.54	95.42

Note: Mission Shakti (MS) Department is carved out from the Department of Women and Child Development in the year 2022-23.

Source: Compiled from the Gender Budget Documents, Government of Odisha

The percentage of allocation in the top 10 departments of Part-B is illustrated in Table 3. The data shows that the department of Panchayati Raj & Drinking Water (PR&DW) plays a predominant role under Gender Sensitive Budget as it is associated with the highest allocation with an oscillating trend over the years. Department of Rural Development (RD) has the next biggest allocation followed by School& Mass Education (SME) in 2017-18. But, the proportion of spending by these departments are fallen over the years. The overall trend of expenditure by H & FW, Works and Disaster Management shows an increasing one with minor fluctuation. On the contrary, another pair of departments where the proportion of allocation is shrinking over the years are ST & SC Development, W & CD and Agriculture& Farmers' Empowerment (A & FE). The proportion of allocation by the department of SSEPD is around 6.5 percent of the Pro-women Budget over the years. It is observed that the expenditure made by these 10 departments constitute around 84 percent of the total Gender Sensitive Budget.

4.4. Mapping of Allocation Across Types of Expenditure and Sources of Funding in GB

In tune with the recommendation of 14th Finance Commission, Government does away with Plan/ Non-Plan division of expenditure, with effect from Fiscal Year 2017-18. Thereafter, all the expenditures

Table 3: Top 10 Departments of Gender Sensitive Budget (value in %)

Department	*17-18*	*18-19*	*19-20*	*20-21*	*21-22*	*22-23*	*23-24*
PR & DW	21.88	25.54	19.25	17.61	13.17	17.98	18.24
H & FW	9.22	5.16	7.43	10.91	15.36	13.54	12.80
Works	6.92	6.10	8.01	9.40	8.20	9.49	11.26
S & M	10.60	7.33	8.72	9.36	6.53	8.77	9.80
RD	13.30	17.89	6.58	8.68	8.36	8.92	7.10
SSEPD	6.29	5.11	6.83	4.64	7.12	6.56	6.95
DM	4.37	3.25	9.69	7.24	7.56	3.95	5.42
ST&SCDev	4.57	5.14	3.33	3.14	3.48	2.80	2.97
W & CD	9.41	3.61	3.37	4.69	3.36	2.46	2.26
A & FE	6.83	6.34	12.30	6.81	6.70	5.69	1.53
Total	93.39	85.47	85.51	82.48	79.84	80.16	78.33

Source: Compiled by Authors

are categorised into four different components, viz., "Administrative Expenditure (AE), Programme Expenditure (PE), Disaster Response Fund (DRF) and Transfers. Further, PE is sub-divided into State Sector Schemes (SSS), Central Sector Schemes (CS), Centrally Sponsored Schemes (CSS); DRF is bifurcated into State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF); and Transfers are segregated as Union Finance Commission transfers to local bodies, State Finance Commission transfers to local bodies and other transfers" (Odisha Budget 2018-19: At A Glance, GoO). This finer division of expenditure will help us to track the source of funding of different schemes and programmes initiated by various line departments for implementation of gender specific/ gender sensitive activities.

Table 4 depicts AE, PE and DRF from 2017-18 to 2023-24 under GB of Odisha.

Panel I explain the detailed segregation of allocations under Part-A of GB. PE constitute biggest share, i.e., 98.5 per cent. Other expenditures such as AE and DRF contribute a marginal portion while Transfer from State remains zero. In 2017-18, segregation was not reported. In 2018-19 and 2019-20 schemes under SSS dominate the picture as compared to CSS. However, from 2020-21 onwards juxtapose occurred. CS plays an insignificant role throughout the analysis.

Allocation under Part- B of the GB is shown in Panel II. It can be inferred from the table that the total allocation for Gender Sensitive schemes increases continuously from Rs. 260.02 billion in 2017-18 to Rs. 560.46 billion in 2023-24 except 2020-21 and 2021-22 on account of COVID-19. Among different types of expenditure, PE is the dominant one, i.e., more than 88 percent, on the contrary, the TS is trivial (less than one percent). Less than 4 percent of total expenditure is made towards AE. The DRF is hovering around six percent of total allocation. The schemes funded by the State constitute more than half of the total schemes under PE. It was 56.88 percent in 2017-18, suddenly increases to 86.25 percent in the next year but reverts back to 49.89 percent in 2019-20 and around 60 percent

thereafter till the end of the period. Central Sector schemes cover a very insignificant part of PE. The rest of the allocation is running under CSS.

Table 4: Mapping of Allocation across Types of Expenditure and Source of Funding in GB

Panel I: Gender Specific (Part-A) Schemes							
	2017-18	*2018-19*	*2019-20*	*2020-21*	*2021-22*	*2022-23*	*2023-24*
AE	.10	0.33	0.41	0.44	0.54	0.67	0.86
	(0.55)	(1.26)	(1.56)	(1.37)	(1.22)	(1.26)	(1.50)
PE	17.98	25.93	26.12	32.08	43.86	52.46	56.96
	(99.4)	(98.11)	(98.44)	(98.34)	(98.6)	(98.52)	(98.5)
SSS		15.55	22.53	12.19	14.13	18.27	22.59
		[59.98]	[86.25]	[38.00]	[32.22]	[34.83]	[39.67]
CS		0.12	0.01	0.16	0.83	0.90	0.48
		[0.47]	[0.07]	[0.50]	[1.90]	[1.72]	[0.84]
CSS		10.25	3.57	19.73	28.90	33.29	33.88
		[39.55]	[13.69]	[61.49]	[65.88]	[63.45]	[59.49]
DRF	0	0.16	0	0.09	0.07	0.11	0
		(0.63)		(0.29)	(0.18)	(0.22)	
Total	18.08	26.43	26.53	32.63	44.49	53.25	57.83
Panel II: Gender Sensitive (Part-B) Schemes							
	2017-18	*2018-19*	*2019-20*	*2020-21*	*2021-22*	*2022-23*	*2023-24*
AE	27.96	14.59	10.04	11.67	14.56	16.53	16.19
	(10.76)	(3.62)	(2.23)	(2.94)	(3.55)	(3.25)	(2.88)
PE	232.06	375.95	396.57	353.22	361.65	467.89	510.50
	(89.24)	(93.30)	(88.26)	(89.06)	(88.17)	(92.13)	(91.08)
SSS		213.82	211.53	176.22	215.16	281.77	323.46
		[56.88]	[86.25]	[49.89]	[59.49]	[60.22]	[63.36]
CS		9.48	0.33	0.63	0.22	0.95	1.10
		[2.52]	[0.07]	[0.18]	[0.06]	[0.20]	[0.22]
CSS		152.64	184.70	176.35	146.25	185.15	185.94
		[40.60]	[13.69]	[49.93]	[40.44]	[39.57]	[36.42]
DRF		12.39	42.65	28.72	30.92	19.94	30.36
		(3.07)	(9.49)	(7.24)	(7.5)	(3.92)	(5.41)
SDRF		8.97	9.71	23.72	25.92	12.22	19.62
NDRF		3.41	32.94	5.00	5.00	7.71	10.73
TS		0	0	2.94(0.74)	2.99(0.73)	3.45(0.68)	3.41(0.60)
Total	260.02	402.94	449.27	396.56	410.14	507.82	560.46

Note: Figure in Parenthesis () shows the percentage of item out of total allocation, Figure in Parenthesis [] shows the percentage of item out of PE and the outside values are Rs. in billion.

Source: Compiled by Authors

4.5. Improvement in the Status of Women in Odisha

In this section we shall investigate the linkage between GB and WE. Paucity of sex-disaggregated data is a stumbling block in this direction. On account of data constraints, we are not in a position to forge one-to-one relationship between GB and WE. Yet, the position of women can be judged from their socio-economic-political status. Here, it is assumed that the allocation made under GB helps women to improve their socio-economic-political status.

Appendix-II exhibits different socio-economic-political variables of women in Odisha for three different time period. The economic status of women is gauzed from Labour Force Participation Rate (LFPR), Work Participation Rate (WPR) and Unemployment Rate (UR). All these three parameters reflect a fluctuating trend over the period but the end result is encouraging. Literacy rate among women increased from 50.51 percent to 69.50 percent. Data on ten or more years of schooling enhanced from 26.7 percent to 33.0 percent. So far as health status is concerned, we have taken six variables, viz., women having BMI below normal (BMI <18.5 kg/m2), women aged 15-49 years who are anaemic, mothers who had at least 4 antenatal care visits, mothers who received postnatal care within 2 days of delivery, institutional births and Births attended by skilled health personnel. All these variables show a considerable improvement over the period, the only exception is women aged 15-49 years who are anaemic accentuated during 2015-16 to 2020-21, implied thereby health status of women traversed in the desired direction.

Data reveals that the social status of women has been improved over time. Participation of currently married women in household decision-making progressed from 80.3 in 2005-06 to a high of 90.2 in 2020-21. At the same time, women married before the legal year of marriage and women affected by spousal violence declined from 37.2 to 20.5 and 38.4 to 30.6 respectively in the corresponding period. Further, women having bank or saving account that they use moved significantly from a low of 9.8 percent in 2005-06 to a quantum jump 86.5 percent in 2020-21. Likewise, women having a mobile phone that they use also augmented. Political participation of women represented by percentage of elected members in Lok Sabha and State Legislative Assembly also improves, though not remarkable.

5. Results and Discussion

The total allocation under the Gender Budget was only Rs. 0.96 billion in 2010-11 increased to Rs. 618.30 billion in 2023-24 with a decline in 2020-21 on account of COVID pandemic. Component wise Gender Sensitive schemes dominate the picture. Per Capita Expenditure (PCE) per annum in GB at constant prices is calculated as Rs. 52.80 in 2010-11 improves to Rs. 14354.89 in 2023-24. Initially PCE was very low due to non-inclusion of a major component of GB, i.e., Part-B till 2015-16. The average Per Capita Expenditure per annum is Rs.8420.74. The trend of GB is ascertained from CAGR and AAGR. These values are 37.04 & 31.51 for Part-A and 6.33 & 6.13 for Part-B. The overall quantum of Gender Budget as a percentage of GSDP and Total Budget continues to rise from 2010-11 to 2019-20 with an exception in 2016-17. From 2019-20 onwards both these indicators decline continuously. The composition of the gender budget is inferred from the absolute and percentage distribution of allocations across the departments. Women and Child Development/Mission Shakti Department tops the list of allocations under Part-A followed by Health and Family Welfare Department. The department of PR

& DW plays a predominant role under the Part-B of GB followed by Health & Family Welfare, School & Mass Education and Works Department. Investigation of the GB allocations across types of expenditure shows that PE constitutes the lion's share both under Part-A & Part-B, i.e., 98.55 and 90.17 per cent of the total expenditure respectively. So far as funding of PE is concerned it is observed that the SSS dominates the picture as compared to CSS till 2019-20 under both parts of the GB. However, the trend remains the same under Part-B but the juxtapose occurs in the case of Part-A. CS schemes play a marginal role in the entire GB Statement.

To track the status of women in Odisha over the study period we have analysed 18 socio-economic-political parameters. It is observed that, concerning socio-political indicators women progressed in desired direction, however, status quo is maintained in the field of economic indices. This may safely be considered as the outcome of gender budgeting practice, hence, corroborating the fact that "if a development intervention promotes women's empowerment along a particular dimension, empowerment in other dimensions will necessarily follow" (Narayana, 2005).

6. Conclusion

In 2004-05 Odisha introduced the practice of GB and became the first State of India to enforce it and continues till date. The progress of GB of Odisha is in the right direction. It is found that allocation for Gender Specific schemes (Part-A) is rising consistently, even if it constitutes a small portion and Gender Sensitive schemes (Part-B) is dominant in GB of Odisha. GB as a percentage of GSDP and Total Budget continued to rise from 2010-11 to 2019-20, afterward both these indicators declined marginally. Under Part-A of the gender budget W&CD/MS tops, whereas in Part-B the Department of PR&DW leads the list of allocations. Among different types of expenditure, PE is the dominant one under both Parts. So far as funding of schemes is concerned SSS has an edge over CSS in GB, while in the post COVID period the scenario is inverse under part-A. Data reveals that COVID-19 had a transitory negative impact on allocation of GB, but reverted back soon. Lack of sex-disaggregated data compels us to abandon an outlay-outcome approach to explore the impact of GB on WE. However, by taking data on the socio-economic-political performance of women at three different points of time, it is noticed that a perceptible progress in the status of women occurred in Odisha, which may safely be ascribed to gender budgeting practice.

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Appendix I: Gender Budget Allocation of Odisha during 2010-11 to 2023-24

Year	*Total Allocation (Rs in Billion)*	*Allocation under Part-A (Rs in Billion)*	*Allocation under Part-B (Rs in Billion)*	*Growth Rate of Allocation under Part-A*	*Growth Rate of Allocation under Part-B*	*Allocation under Part-A (In %)*	*Allocation under Part-B (In %)*	*PCA under GB at Constant Prices (Rs.)*
2010-11	0.96	0.96		- -		100		52.80
2011-12	2.37	2.37		146.55		100		114.20
2012-13	4.40	4.40		85.70		100		194.57
2013-14	6.17	6.17		40.10		100		259.37
2014-15	6.75	6.75		9.41		100		268.88
2015-16 *	357.35	14.23	343.12	110.91		3.98	96.02	14505.43
2016-17 *	221.37	13.01	208.36	-8.59	-39.28	5.88	94.12	8560.09
2017-18	278.14	18.08	260.06	39.02	24.81	6.50	93.50	10131.64
2018-19	429.38	26.44	402.94	46.15	54.95	6.16	93.84	14596.49
2019-20	475.82	26.54	449.28	0.38	11.50	5.58	94.42	15379.76
2020-21	429.20	32.63	396.57	22.97	-11.73	7.60	92.40	13113.62
2021-22	454.63	44.49	410.14	36.34	3.42	9.79	90.21	12527.19
2022-23 *	561.09	53.26	507.83	19.70	23.82	9.49	90.51	13831.50
2023-24 #	618.31	57.84	560.47	8.60	10.37	9.35	90.65	14354.89
Mean Value								8420.74
CAGR (%)		37.04	6.33					
AAGR (%)		31.51	6.13					

Note: '*' Represents Revised Estimates, '#' Represents Budget Estimates and all other figures are Actuals.

Source: Compiled by Authors

Appendix II: Women Empowerment over Time (Value in Percentage)

Indicators	*Year of Reference*		
Economic Status	*2004-05*	*2013-14*	*2020-21*
Labour Force Participation Rate [15 years & above; US (PS+SS)]	33.2	22.3	33.2
Work Participation Rate [15 years & above; US (PS+SS)]	29.9	20.1	32.2
Unemployment Rate [15 years & above; US (PS+SS)]	3.2	10	3.1
Educational Status	*2001 Census*	*2011 Census / NFHS 4*	*NSS 75th Round (2017-18)/ NFHS 5*
Literacy Rate	50.51	64.36	69.50
10 or more years of schooling	—	26.7	33.0
Political Participation	14thLS/13th OLA	16thLS/15th OLA	17thLS/16th OLA
Percentage of women elected members of Loka Sabha from Odisha	9.52	14.28	33.3
Percentage of women elected members to Odisha Legislative Assembly	8.16	8.16	11.56
Health Status	NFHS 3 (2005-06)	NFHS 4 (2015-16)	NFHS 5 (2020-21)
Women having BMI below normal (BMI <18.5 kg/m2)	41.4	26.5	20.8
Women aged 15-49 years who are anaemic	61.1	51.0	64.3
Mothers who had at least 4 antenatal care visits	36.9	61.9	78.1
Mothers who received postnatal care within 2 days of delivery	31.7	73.2	88.4
Institutional births	35.6	85.3	92.2
Births attended by skilled health personnel	44.0	86.5	91.8
Social Status	NFHS 3	NFHS 4	NFHS 5
Married before legal years of marriage	37.2	21.3	20.5
Currently married women who usually participate in 3 household decisions	80.3	81.8	90.2
Women having a bank or savings account that they themselves use	9.8	56.2	86.5
Women having a mobile phone that they themselves use	—	39.2	50.1
Women affected by spousal violence	38.4	35.2	30.6

Source: Employment & unemployment Situation in India, NSS Report 61stRound, Periodic Labour force Survey 2019-20, Key indicators of employment & unemployment in India 2009-10; NFHS 3rd, 4th& 5th Round.

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Effect of Select HR Practices on Organizational Citizenship Behavior in Retail Sector of Odisha

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Organizational citizenship behavior, OCB, HR practices, Retail sector, Odisha, Innovation, Employee retention

JEL Classification

E24, J24, N85

Abstract: This study is aimed to study the impact of HR practices on organizational citizenship behavior and find out various HR practices of organizations that help in employee retention. These days, a lot of companies are facing challenges regarding employee retention and engagement. In order to deal with these issues companies; should innovate their HR practices. In addition, there is research gap on the impact of those practices on Organizational Citizenship Behavior (OCB), especially in retail sector. In order to fulfill these objectives, survey questionnaire was sent to senior and mid-level employees in retail sector of Odisha, who are engaged in various organizations. SPSS software version 20 was used to analyze and interpret the data. Findings of the study suggested that there is a significant and positive impact of HR practices ($p<0.05$) analyzed in this study on 'Organizational Citizenship Behavior' of employees in the retail sector.

1. Introduction

Retail sector has become a booming industry in India. In terms of buying behavior and format, the concept of shopping has changed and revolutionized. Modern retail has made a spectacular presence in the form of ecommerce, shopping centers, shopping malls, and complexes offering food, entertainment and brand outlets under one roof. The retail sector in India is at inflexion point where organized retailing and buying behavior of Indian population has taken a huge growth route. There has been a huge change in demographics of India over the years. Retail giants have focused a lot on untapped middle class for the growth of retail industry. Retail sector of Odisha has seen tremendous growth over the years (Anand *et al.*, 2017).

When companies are engaged in innovation, innovative and creative workforce is needed who are willing to "take risks, flexible, and ready to deal with ambiguity and uncertainty (Chen and Huang, 2007)". Companies must adopt healthy HRM practices which can encourage and motivate team to be innovative and creative (Ling and Nasurdin, 2010). HR can inspire creativity and innovation in companies (Gupta and Singhal, 1993). Working environment has become more uncertain and complex than ever since the beginning of privatization, globalization, and liberalization (Kumari and Pradhan, 2014). There has been a great competition among companies due to excessive consciousness and knowledge of employees.

HR practices like training, development, selection, hiring, compensation, and rewards are very vital to boost work culture where employees are motivated to perform at their best and ahead of their optimum level with their "organizational citizenship behavior (OCB)" (Koster and Sanders, 2006). A lot of studies have been done to determine the relation between HR practices and employee behaviors. However, OCB is among the key characteristics of employees to improve their performance and company's efficiency.

HR practices play a vital role in improving success rate for a company with its discretionary efforts over the years (Sun *et al.*, 2007). HR practices have a great amount of flexibility to shape the attitude of employees in OCB for effectiveness of an organization (Mukhtar *et al.*, 2012). Organizational Citizenship Behavior refers to employees' behavior which is ahead of their own roles. It encourages employees to do something out of the way for the overall benefits of an organization in a constructive and positive way (Wright & Boswell, 2002). HR practices have played a vital role for adoption of OCB in order to achieve combined goals for an organization.

2. Literature Review

Detailed studies on OCB have discussed a lot of positive behaviors to improve organizational efficiency. These behaviors discuss the actions to encourage employees to go out of the way of their given roles to achieve their goals. OCB has been associated with company's success in different studies. Organizational Citizenship Behavior is the most cost-effective way to achieve company's effectiveness and competence. OCB has been one of the most effective predictors of success for an organization. There is a lack of study on backgrounds of OCB. Extensive studies have been done on the relation between creative HR practices and OCB. Shaikh *et al.* (2021) conducted a study on the "relation between OCB and HR practices". The study population includes 25 tech companies and 400 employees in Pakistan. Standardized questionnaire was used to gather responses. There is a significant impact of creative HR strategies on OCB. Innovative strategies play a vital role on courtesy, altruism, and civic morality in OCB.

Gupta and Tamhankar (2023) investigated the association between Organizational Commitment (OC) and Organizational Citizenship Behaviour (OCB). The elements of organizational commitment are categorized as affective, normative and continuance. All these three components has been considered and measured in this study. The Organizational Citizenship Behaviour scale used here measures all its five dimensions such as altruism, conscientiousness, courtesy, sportsmanship and civic virtue. Results show that the elements of organizational commitment are significantly and positively related to the five dimensions OCB (p value < 0.01).

Liu *et al.* (2022) investigated the "effect of HR practices on OCB and self-management" with "social exchange and signal theory" with a mediating role of transformational leadership of direct supervisor and moderating role of company support. Data was gathered from 571 employees from various companies in southwest China. There has been a positive impact of HR practices on OCB and self-management of employees partially mediated by transformational leadership of direct supervisor.

Anand and Kumar (2021) has investigated the perception of employees regarding the indulgence of their company in CSR initiatives. It also attempted to highlight the corporate citizenship behavior initiatives adopted and various thematic areas of CSR like education, health, environment protection, rural development, and community development, etc. their study CSR from an employee's point of view and investigated whether employees differ in perception regarding various CSR initiatives adopted by their company.

Whether humility of the leader encourages followers to serve customers beyond their given roles in tourism sector is a matter of concern. Tuan *et al.* (2021) drawn on the "conservation of resources theory" to argue that "humility of the leader promotes service-oriented OCB (SO-OCB) among employees in tourism sector with the mediating role of job assigned. This study further analyzed moderating role of socially responsible HR (SRHR) practices to find out the relation between employee job crafting and leader humility". They gathered data from 136 managers and 894 employees in tour agencies in Vietnam with a 2-wave research design.

Sultana and Johari (2022) conducted a study to determine the relation between SO-OCB and HRM practices. They focused on fair reward, training, and promotion opportunities as HRM practices. They determined the arbitrating role of "impersonal trust" on the "given relationship with social exchange theory". They have collected data with "purposive sampling from employees of 39 private banks in Bangladesh and analyzed with structural equation modeling-partial least square" method. Their findings abide by the "theory of social exchange". All of the HRM practices significantly impact SO-OCB. In addition, there is a mediating relation between "SO-OCB and HRM practices due to impersonal trust".

Nadeak *et al.* (2021) investigated whether more attention on training practices improve performance, while determining the mediating impact of OCB. The study population included 170 employees in MSMEs in Jabodetabek with confirmatory surveys and quantitative approach. They found significant and positive impact of training on performance with mediation of OCB, either directly or indirectly. There are significant implications of this study for decision-making of HR managers about the process of practicing and implementing training in MSMEs. The findings would also help HRM in MSMEs to assess investment plans for HR development.

There are different factors to determine employee performance, such as engagement, development policies, OCB, job creation, and task performance. Implementing various factors has been very important to improve job performance for achievement of organizational goals. However, these factors are interconnected with improvement in performance. Hutapea *et al.* (2021) implemented a quantitative method with survey to achieve leadership impacts on company innovation and learning to improve performance. They conducted survey on 300 banking sector employees in Bekasi City and analyzed with "PLS Structural Equation Modeling (SEM)" approach. These factors have a significant impact on employee performance in banking companies.

2.1. Research Gap

Limited studies have been conducted on the 'effect of HR practices on organizational citizenship behavior' in retail industry. There is even less research on retail sector in Odisha. Hence, this study will fill this knowledge gap.

2.2. Research Questions

- What are the most innovative HR practices in retail industry?
- Is there any impact of HR practices on OCB in retail sector in Odisha?

2.3. Research Objectives

- To determine the most innovative HR practices in retail industry in Odisha.
- To find out if there is any impact of HR practices on Organizational Citizenship Behavior of employees.

2.4. Hypotheses

H_1: There is a significant impact of HR practices on Organizational Citizenship Behavior in retail sector.

H_0: There is no significant impact of HR practices on Organizational Citizenship Behavior in retail sector.

3. Research Methodology

3.1. Research Method and Design

This study is based on primary data collected from an online survey through Google Form. Self-structured questionnaire was used to seek responses from senior and middle-level employees in retail sector in Odisha. The questionnaire was sent to 554 employees, out of which total 224 responses have been collected from targeted employees in retail industry due to time and resource constraints.

3.2. Research Approach

A self-structured questionnaire was used with 5-Point Likert Scale, which consists of responses like "5 = Strongly Agree, 4 = Agree, 3 = Neutral, 2 = Disagree and 1 = Strongly Disagree". In addition, data has been analyzed using Excel spreadsheet and SPSS version 20.0. It was used to have a detailed analysis of relation of given variables.

4. Analysis of the Study

In this study, total 224 responses were collected from senior and mid-level employees in retail sector in Orissa from various industries. Majority (27.7%) participants are aged above 45 in this study. In addition, 50 (22.3%) participants are 40 to 45 years old, 50 (22.3%) participants are 31 to 35 years old, 57 (25.4%) participants are 26 to 30 years old, and only 5 (2.2%) participants are 18 to 25 years old (Table 1).

Table 1: Age Group

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	18-25	5	2.2	2.2	2.2
	26-30	57	25.4	25.4	27.7
	31-35	50	22.3	22.3	50.0
	40-45	50	22.3	22.3	72.3
	Above 45	62	27.7	27.7	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

Majority (63.8%) of participants in this study are female, while 81 (36.2%) participants are male in this study (Table 2).

Table 2: Gender

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Female	143	63.8	63.8	63.8
	Male	81	36.2	36.2	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

Majority (62.1%) participants are senior-level employees and 85 (37.9%) participants are medium-level employees in their organizations in retail sector (Table 3).

Table 3: Position in an Organization

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Medium Level	85	37.9	37.9	37.9
	Senior Level	139	62.1	62.1	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

In this study, 107 (47.8%) participants work in FMCG industry, 70 (31.3%) participants work in footwear organization, 22 (9.8%) participants work in electronics organization, 24 (10.7%) work in other organizations, and only 1 employee works in clothing organization (Table 4).

Table 4:Type of Retail Organization

		Frequency	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Clothing	1	.4	.4	.4
	Electronics	22	9.8	9.8	10.3
	FMCG	107	47.8	47.8	58.0
	Footwear	70	31.3	31.3	89.3
	Others	24	10.7	10.7	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

4.1. HR Practices in Retail Organizations

There are 147 (65.6%) employees and 55 (24.6%) who strongly agree and agree that "HR executives in their organization are fully aware of business needs and strategies" (Table 5).

Table 5: Awareness of Business Strategies

"HR Executives in your organization are fully aware of business strategies and needs"		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	0.0	0.0	0.0
	Disagree	11	4.9	4.9	4.9
	Neutral	11	4.9	4.9	9.8
	Agree	55	24.6	24.6	34.4
	Strongly Agree	147	65.6	65.6	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 89 (39.7%) participants who agree and 55 (24.6%) participants strongly agree that HR takes full efforts to generate awareness about company's strength, financial position, customers' needs, and service/product quality. There are also 35.7% participants who neither agree nor disagree with that statement (Table 6).

There are 101 (45.1%) employees who agree and 84 (37.5%) employees strongly agree that their opinion is taken by the organization to develop performance standards, while 39 (17.4%) neither agree nor disagree with that statement (Table 7).

There are 140 (62.5%) employees who strongly agree and 60 (26.8%) employees agree that all members of the company can achieve appraisals for good performance, while only 12 (5.4%) employees disagree and same number of employees neither agree nor disagree (Table 8).

Table 6: Willingness to take Initiatives

HR takes full efforts to generate awareness about company's strength, financial position, customers' needs, service/product quality, etc.		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	00.0	00.0	00.0
	Disagree	00	00.0	00.0	00.0
	Neutral	80	35.7	35.7	35.7
	Agree	89	39.7	39.7	75.4
	Strongly Agree	55	24.6	24.6	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

Table 7: Giving Value to Employees' Opinion

Employees opinion is taken to develop performance standards		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	00.0	00.0	00.0
	Disagree	00	00.0	00.0	00.0
	Neutral	39	17.4	17.4	17.4
	Agree	101	45.1	45.1	62.5
	Strongly Agree	84	37.5	37.5	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

Table 8: Appraisals given for Good Performance

All members of the company can achieve appraisals for good performance		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	0.0	0.0	0.0
	Disagree	12	5.4	5.4	5.4
	Neutral	12	5.4	5.4	10.7
	Agree	60	26.8	26.8	37.5
	Strongly Agree	140	62.5	62.5	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 88 (39.3%) employees who agree that company has proper growth policy and career planning for employees, while 82 (36.6%) employees who neither agree nor disagree (Table 9).

Table 9: Career Planning and Growth Policy for Employees

Organization has proper career planning and growth policy for employees		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	0.0	0.0	0.0
	Disagree	00	0.0	0.0	0.0
	Neutral	82	36.6	36.6	36.6
	Agree	88	39.3	39.3	75.9
	Strongly Agree	54	24.1	24.1	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 97 (43.3%) employees who agree and 88 (39.3%) employees who strongly agree that company conducts employee satisfaction/behavior surveys on regular basis, while 39 (17.4%) employees neither agree nor disagree (Table 10).

Table 10: Employee Satisfaction/Behavior Surveys

Company conducts employee satisfaction/ behavior surveys on regular basis		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	00	00.0	00.0	00.0
	Disagree	00	00.0	00.0	00.0
	Neutral	39	17.4	17.4	17.4
	Agree	97	43.3	43.3	60.7
	Strongly Agree	88	39.3	39.3	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 158 (70.5%) employees who strongly agree and 54 (24.1%) employees who agree that employees are encouraged to suggest improvements in policies, process, etc. (Table 11).

Table 11: Employees Suggesting Improvements

Employees are encouraged to suggest improvements in policies, process, etc.		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	6	2.7	2.7	2.7
	Neutral	6	2.7	2.7	5.4
	Agree	54	24.1	24.1	29.5
	Strongly Agree	158	70.5	70.5	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

4.2. Organizational Citizenship Behavior

There are 103 (46%) employees who agree and 59 (26.3%) employees strongly agree that they follow company's rules even when they are not being watched, while 62 (27.7%) neither agree nor disagree with that (Table 12).

Table 12: Following Company Rules Every Time

I follow company's rules even when I am not being watched		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	62	27.7	27.7	27.7
	Agree	103	46.0	46.0	73.7
	Strongly Agree	59	26.3	26.3	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 135 (60.3%) employees who agree and 54 (24.1%) employees strongly agree that they believe in giving full value to their organization for what they get paid (Table 13).

Table 13: Giving full Value for Work

I believe in giving full value to my organization for what I get paid		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	35	15.6	15.6	15.6
	Agree	135	60.3	60.3	75.9
	Strongly Agree	54	24.1	24.1	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 125 (55.8%) employees who strongly agree and 63 (28.1%) employees who agree that they are aware that their behavior affects co-workers' performance (Table 14).

There are 90 (40.2%) employees who agree and 92 (41.1%) employees strongly agree that they don't abuse others' rights, while 42 (18.8%) neither agree nor disagree (Table 15).

Table 14: Awareness of Impact of Behavior

I am well aware that my behavior affects co-workers' performance		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	3	1.3	1.3	1.3
	Neutral	33	14.7	14.7	16.1
	Agree	63	28.1	28.1	44.2
	Strongly Agree	125	55.8	55.8	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

Table 15: Taking Care of Others' Rights

I don't abuse others' rights		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	42	18.8	18.8	18.8
	Agree	90	40.2	40.2	58.9
	Strongly Agree	92	41.1	41.1	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 100 (44.6%) employees who strongly agree and 48 (21.4%) employees who agree that they help their coworkers at the time of heavy workloads, while 74 (33%) employees were neutral (Table 16).

Table 16: Helping Others in Need

I help my coworkers at the time of heavy workloads		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Disagree	2	.9	.9	.9
	Neutral	74	33.0	33.0	33.9
	Agree	48	21.4	21.4	55.4
	Strongly Agree	100	44.6	44.6	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 86 (38.4%) employees who strongly agree and 83 (37.1%) employees who agree that they help new employees to be familiar with the organization and work culture, while 55 (24.6%) neither agree nor disagree (Table 17).

Table 17: Supporting New Employees

I help new employees to be familiar with the organization and work culture		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	0	0
	Disagree	0	0	0	0
	Neutral	55	24.6	24.6	24.6
	Agree	83	37.1	37.1	61.6
	Strongly Agree	86	38.4	38.4	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

There are 98 (43.8%) employees who agree and 83 (37.1%) strongly agree that they willingly help their coworkers who have problems in their work, while 43 (19.2%) employees were neutral (Table 18).

Table 18: Willingness to Solve Others' Problems

I willingly help my coworkers who have problems in their work		*Frequency*	*Percent*	*Valid Percent*	*Cumulative Percent*
Valid	Strongly Disagree	0	0	00	0
	Disagree	0	0	00	0
	Neutral	43	19.2	19.2	19.2
	Agree	98	43.8	43.8	62.9
	Strongly Agree	83	37.1	37.1	100.0
	Total	224	100.0	100.0	

Source: Authors' Own Compilation

In order to find out the impact of HR practices on organizational citizenship behavior, we have conducted one sample t-test using SPSS tool version 20. It is observed that the value of significance is $p<0.05$ for all variables (Table 19). It means there is a "positive and significant impact of HR practices on Organizational Citizenship Behavior", which approves alternate hypothesis and rejects null hypothesis, i.e., there is "no significant impact of HR practices on Organizational Citizenship Behavior".

Table 19: One-Sample T-test on Responses

	Test Value = 0					
	t	*df*	*Sig. (2-tailed)*	*Mean Difference*	*95% Confidence Interval of the Difference*	
					Lower	*Upper*
HR Executives in your organization are fully aware of business strategies and needs	83.984	223	.000	4.509	4.40	4.61
HR takes full efforts to generate awareness about company's strength, financial position, customers' needs, service/product quality, etc.	75.581	223	.000	3.888	3.79	3.99
Employees opinion is taken to develop performance standards	87.951	223	.000	4.201	4.11	4.30
All members of the company can achieve appraisals for good performance	81.006	223	.000	4.464	4.36	4.57
Organization has proper career planning and growth policy for employees	75.239	223	.000	3.875	3.77	3.98
Company conducts employee satisfaction/behavior surveys on regular basis	87.439	223	.000	4.219	4.12	4.31
Employees are encouraged to suggest improvements in policies, process, etc.	103.111	223	.000	4.625	4.54	4.71
I follow company's rules even when I am not being watched	81.014	223	.000	3.987	3.89	4.08
I believe in giving full value to my organization for what I get paid	97.661	223	.000	4.085	4.00	4.17
I am well aware that my behavior affects co-workers' performance	83.716	223	.000	4.384	4.28	4.49
I don't abuse others' rights	85.163	223	.000	4.223	4.13	4.32
I help my coworkers at the time of heavy workloads	68.301	223	.000	4.098	3.98	4.22
I help new employees to be familiar with the organization and work culture	79.106	223	.000	4.138	4.04	4.24
I willingly help my coworkers who have problems in their work	85.663	223	.000	4.179	4.08	4.27

Source: Authors' Own Compilation

5. Results and Discussion

In this study, some of the best HR practices that most organizations followed are awareness of business strategies, willingness to take initiatives, giving value to employees' opinion, rewarding them with

appraisals for good performance, career planning and growth policy for employees, taking employee satisfaction/behavioral surveys from time to time, and encouraging employees to suggest improvements in policies process, etc. In addition, it is observed that there is a significant impact ($p<0.05$) of those practices on employees' "Organizational Citizenship Behavior (OCB)" in retail organizations in Odisha. So, organizations are suggested to improve their HR practices regularly to boost morale of employees to go beyond their job roles when meeting combined goal for organizational growth.

HRM practices like extensive benefits, reasonable compensation, and job security can be helpful to retain and attract potential employees in companies, and practices like teamwork, employee engagement, and flexible schedule may provide opportunities to employees for share knowledge and gain new skills (Jiang *et al.*, 2012). There are some limitations of this study. First of all, conducting research on single method has a risk of bias. "Self-administered questionnaire" was used in this study to collect data. The primary data can reveal the overall impact of predictor variable for a specific scenario only at a given time (Cavana et al., 2001). Secondly, longitudinal study must be conducted for more useful data from the participants because cross-sectional data cannot give specific causal outcome. The research has provided important findings on the "impact of HR practices on OCB of employees in retail sector".

Third, the study is focused only on a few companies in retail sector of Odisha to find out the impact of some HR practices on OCB among senior and mid-level employees. We suggest expanding this research to non-retail employees too. All in all, longitudinal study would be ideal for future research, which may bring significant results and findings.

6. Conclusion

The main objective of this study was to find the best HR practices and their impact on OCB of retail sector employees in Odisha. This study has successfully addressed the given research objective. The findings will hopefully help improve the performance of organizations in retail sector by understanding the attitudes and behaviors of employees. Hopefully, organizations in Odisha would make improvements in their HR processes considering the findings of this study. Hence, we suggest retail organizations in Odisha to be more focused towards organizational citizenship behaviors of their employees. Future studies may have findings which may contradict this study. There is still hope that this study will add further knowledge to research academia related to HRM and retail sector.

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A Study on UNESCO's World Heritage Rail Tourism in the Nilgiris Hills

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JEL Classification

Z11, D6, F5, H87

Abstract: India is the world's supreme visited nations regardless of numerous encounters associated with several disputes confronted nationwide and worldwide. The Government of India has preserved 16 steam locomotives by the Indian Railways as operational heritage which is a noteworthy one. The steam engine services are operated through the Darjeeling Himalyan Railway (DHR) and Nilgiri Mountain Railway (NMR). The UNESCO Heritage Site has been acknowledged to the Nilgiri Mountain Railway with a unique combination of architectural, cultural and tribal history, known as "Blue Mountains" as the "Heritage tourism". The objectives of the study are to analyze the motivating factors attracting the tourists towards Nilgiris Mountain Railway. For analysis Student "t" test, One-way Anova, Chi-square test, Pearson Correlations and Factor Analysis has been applied. The UNESCO's World Heritage Tourism Sites, the Nilgiri Mountain Railway (NMR) gains its momentum on the Queen of the Hills in the Nilgiris district.

1. Introduction

India is one of the world's greatest visited nations regardless of numerous encounters associated with several disputes confronted nationwide and worldwide. The Indian Railways deserves its appreciation for its services rendered through Darjeeling Himalayan Railway in the year 1999, Chhatrapati Terminus, services at Mumbai in 2004, Nilgiri Mountain Railway in 1999 and Kalka Shimla Railway in 2008 as the self-righteous owner for the UNESCO World Heritage Sites. The Nilgiri Hills is a famous tourist destination of southern India. Udhagmandalam is a famous hill station filled with flora, fauna and the local tribes on the stunning hills. Nilgiris is a treasure house of natural wealth and beauty. Snaking its way up the steep Coonoor slopes, the engineering marvel that is the more than 125-year-old Nilgiri Mountain Railway (NMR) line has become one of the primary drivers of tourism in the picturesque

hill district of Udhagamandalam. It is renowned for its 'rack and pinion' mechanism that drives the train up the steep gradient of the Coonoor ghat slope for around 19 km of its journey, and this site came to be known as mountain railways of India. The new coal-fired steam engine from the Golden Rock Railway Workshop, Tiruchchirappalli was dispatched to Mettupalayam on 02.09.2021, with a new engine, X-37400. It is 10.38 metres long and weighs 50 tonnes, has a capacity to hold 3.8 tonnes of coal and its water tank can contain 4500 litres of water. Thus, this heritage train is like a crown on the Queen of the hills as the "THE BLACK BEAUTY - (X-37400) OF 1899".

1.1. Panorama of the Heritage Sites worldwide of UNESCO in Indian Railways

Indian Railways have well-maintained locomotives by steam which add up to more than two hundred and thirty. It also has one hundred Classic very old coaches of vintage period and has installed engines and train wagons at heritage places, renowned parks, well known for attracting the public to visit the display. These stocks drag the visitors as they are more than hundred years and they give joy and jest to the visitors for gaining their old memories. The Nilgiris hills has its own history from 1800s as a treasure with British-era Buildings and recently this hills otherwise known as "Blue Mountains" is one of "Heritage tourism" which has been declared a UNESCO Heritage Site, which portrays a unique combination of architectural, cultural and tribal history. The well famous British-era buildings back to the early 19th century viz, Ootacamund club, St. Stephen church, Nilgiri Mountain Railway (NMR), Fern hill Royal Palace, The Nilgiri Library, Adams Memorial Fountain and Stone House, are the heritage buildings on the queen of the hills.

2. Review of Literature

Bansode *et al.* (2018) explored the influence of tragedy and consequential hazards faced by the tourists, and their perception on their travel intentions at the heritage places worldwide. This study concludes that to reduce risk the tourists must develop diverse tactics which could be implemented by the tourism industry, for developing tourism in order to sustain the industry. Jun *et al.* (2018) portrays the Jiuzhaigou Natural worldwide site as a heritage place which has a vulnerable environmental atmosphere and prosperous tourism industry. This study analysed the alterations in the usage of land, the effective mechanism for driving adopted, and the spatial patterns to be used in lands for tourism for the years 2025 and 2035. Kwong *et al.* (2018) focused his study on the writings of the world wide UNESCO (United Nation Educational, Scientific and Cultural Organization) heritage sites and concluded that the protection of decaying legacy constructions that are located at very old heritage builds in the responsive region, enclave of George Town in buffer zones. Brumann (2019) studied the UNESCO World Heritage Convention of 1972 is often observed as an achievement, and a place on the World Heritage List, with its now more than one thousand entries, has become a major global distinction, inspiring tourism, self-esteem, investments and conservation efforts. Barman *et al.* (2019) portrayed the analysis of eighteen countries which has visited India from 2001-2015. The study reveals that per capita income, past experiences cost of living in India and other countries together with the level of infrastructure development. Kar *et al.* (2020) studied about the value - added, authentic homogenous experiences offered in the tourism sector. Pandya (2020) studied the tourism industry in India is working

well for the development of isolated rural areas, generation of job opportunities for all sectors to shape their living standards, development of infrastructure, raise foreign exchange and to promote the Indian Art and crafts. Khristov (2020) has highlighted Inbound Tourism, its characteristics and viewpoint, India as one of the best in Asia as a significant tourist destination. Indian tourism has good potential requirements for tourists, but still needs high utilization of the vast region untouched by tourism department for utilizing all the regions for domestic and foreign travelers. Gaikwad et al. (2021) highlighted a case study about the Ellora caves as a worldwide heritage site based on the satisfaction of the tourists and the loyalty on the destination. It was pragmatic that the tourists have been satisfied and had shown their willingness to revisit the destination sites which has been a great improvement towards loyalty. Agrawal *et al.* (2023) have studied the services provided in the service sector like luxury hospital by using recent technology like robo.Thakur *et al.* (2021) studied a case study about the famous place called Srirangapattina, in Mysore region on the assessment of environmental strategy in heritage related to culture and tourism planning. It was found that sustaining cultural heritage to attract tourists depend on the offerings to the host community.

Silas (2021) studied that the ancient culture and heritage of the prominent Agra city is worldwide famous for its destination sites. It has concluded that this city gains more revenue and employment as the main source of generations of skills and sources of raising funds through marketing heritage products, handmade products, health care services, etc. Lama *et al.* (2021) studied about the labor-intensive sectors that has been affected drastically because of the COVID 19, which turned the global tourism upside down. This out-break of the virus has changed the concept of sustainability and has shaped the tourism sector to gain more planning and developing the tourist destinations. Peira *et al.* (2022) explored about the railways which is plentiful, especially on the arena of mining and industrial sectors. Azharunnisa *et al.* (2022) analyzed about the centers which facilitates the tourist's entry as a circuit through network analysis, in order to create an effective relationship among the people who are involved in crafts work as a custodian for developing the cultural heritage to develop tourism through their economic activities.

3. Objectives of the Study

- To analyze the socio-economic conditions of the sample respondents.
- To examine the factors that motivate and attract the tourists towards UNESCO's World Heritage Rail Tourism Site -Nilgiris Mountain Railway (NMR) in the Nilgiris district.

4. Hypotheses of the Study

H1: Absence of correlation among age and the thrilling journey on the "Queen of the Hills" for all ages.

H2: Relationship among gender and the convenience of the train timings.

H3: Lack of noteworthy relationship among educational qualification and mode of booking tickets.

H4: Non-existence of relationship among occupation and Nilgiri Mountain Railway toy train draws tourists to escape summer heat.

H5: Lack of considerable dissimilarity among yearly income and Nilgiri Mountain Railway toy train draws tourists to escape summer heat.

5. Methodology

A reasonable and proper search for novel and practical information is known as research, which is undertaken in a creative way to boost the knowledge for human beings in culture, science and society, to operate those using effective device applications and gain facts. Tools and techniques in statistics are used to find out the validity, determine reliability to verify the standardization. Studying the entire population is a difficult task for a researcher. A sub-group representing the population is studied for the purpose of research, referred to as the sample of the study. This research is descriptive in nature and portrays, "A study on the attractive factors of the UNESCO's World Heritage Rail Tourism in the Nilgiris Hills".

5.1. Sampling Framework

In this study, the specific target population are the railway passengers who travel through Nilgiris Mountain Rail (Toy train) from Mettupallayam railway station till Udghamaanadalam Railway Station (up and down) in the Nilgiris Hill station. The target population is classified into elements, sampling unit, extent and time. In the present study, the elements are the samples or respondents who use train transportation service and the sampling unit is the passengers travelling by Nilgiris Mountain Rail. This study is confined only to the tourists who visited Nilgiris Hills through Nilgiris Mountain Rail (NMR), during the period April 2022 to August 2022.

5.2. Collection of Data

Primary Data and Secondary data were collected. The Tourism Department uses visitor numbers at the Government Botanical Garden (GBG) in Udhagamandalam to roughly estimate tourist inflow as it is the most popular destination in the Nilgiris. According to officials, a total of 1.27 lakh additional tourists visited the Nilgiris during April and May 2023, when compared to the same period last year. A total of 7.34 lakh visitors had come to the Government Botanical Garden (GBG) in 2022, the numbers witnessed a significant increase, with a total of 8.61 lakh visitors, being recorded this year.

Primary data: The well designed and structured questionnaire was distributed among sample respondents to collect primary data.

Secondary data: This data was collected from journals, research articles, magazines newspapers, and websites.

5.3. Sampling Size

The questionnaire using Rensis Likert five point scales were administered to the sample respondents through survey method by using Convenience sampling technique, among the selected one hundred and twenty- five (125) tourists who visited Nilgiris Hills through Nilgiris Mountain Rail (NMR), in the period April 2022 to August 2022.

5.4. Statistical Tools

For the purpose of analysis and interpretation of the study the statistical software SPSS 20 version has been used to conduct and the tests like Simple Percentage Analysis, Chi-Square test, Pearson's Correlation Coefficient test, Student "t" test and Factor Analysis.

6. Analysis and Interpretation

6.1. Reliability Test

To assess the consistency internally it is measured widely by way of certain constructs called Cronbach's alpha. This is normally accepted at an agreed value of Cronbach's alpha, 0.70, even though it may diminish to 0.60 in case of investigative research (Hairetal.2006; pp.137). This test has been shown in the table given below:

Table 1: Reliability Test

Particulars	*Items in numbers*	*Range*	*Value of Cronbach's Alpha*
Socio-economic conditions and influencing factors attracting UNESCO'S World Heritage Rail Tourism Site, The Nilgiri Mountain Train (NMR)	20	9-28	.938
Overall reliability	20	1-30	.938

The above table highlights the measure for reliability as the whole scale shows 0.938 which is adequate as the consistency for all the constructs in the values. The result of Cronbach's alpha sketches a noteworthy amount of relationship among the variables tested. The validity of a test is the degree to which dissimilarity in scores reflect differences in the measured characteristic.

6.2. Socio-economic Condition of the Sample Respondents

For the purpose of the study the demographic factors such as Age, Gender, Marital status, Educational qualification, Occupation, Annual Income, Family size, and Number of respondents has been taken for analysis and interpretations of the study.

The above table depicts the percentage analysis of 125 sample respondents based on their demographic profile. The results show that 46.4% (58) of the sample respondents show majority on the age of the sample respondents, 56.0% (70) on gender of the sample respondents, 56.8% (71) on marital status of the sample respondents, 42.4% (53) on educational qualification of the sample respondents, 29.6% (37) on occupation of the sample respondents, 44.8% (56) on annual income of the sample respondents, 58.4% (73) on family size of the sample respondents and 38.4% (48) on number of dependents in their family of the sample respondents.

Table 2: Socio-economic Condition of the Sample Respondents

Particulars	*Particulars*	*Frequency*	*Percentage*
Age	26-50	58	46.4
Gender	Male	70	56.0
Marital status	Married	71	56.8
Educational qualification	Degree and Diploma	53	42.4
Occupation	Private	37	29.6
Income (pa)	Between Rs 2,50,001 to Rs 5,00,000	56	44.8
Family size	Nuclear	73	58.4
No. of dependents	3-4	48	38.4

Source: Primary data

6.2. Pearson's Correlation Test

Pearson's Correlation Coefficient test was used in this study to compute the correlation between age of the sample respondents and thrilling journey on the black beauty of the Queen of the hills for all ages.

Hypothesis 1

Pearson's Correlation between Age and Thrilling journey on the "Queen of the Hills" for all ages.

Null Hypothesis: There is no correlation between age and the thrilling journey on the "Queen of the Hills" for all ages

Table 2: Age of the Sample Respondents and the Thrilling Journey on the "Queen of the Hills" for all Ages (Pearson's Correlation Coefficient Test)

Age	*Pearson Correlation r value*	*Sig 2 tailed P value*	*Mean*	*Standard deviation*
Thrilling journey on the "Queen of the Hills" for all ages	.181*	.043	1. 85 2.24	.719 .777

Source: Computed from Primary Data

Inferences

The thrilling journey on the "Queen of the Hills" for all ages is 2.24 and .777, and the measured mean is 1.85 and standard deviation is .719. The "r" value is .181 measured as per Pearson Correlation Coefficient test, and the "p" value is .043 according to result gained significance 2 tailed. It is less than .05. This shows that the Null hypothesis is rejected and it can be inferred that there is a correlation between the age and the thrilling journey on the "Queen of the Hills" for all ages.

6.3. Student "t" Test

In this test under null hypothesis a student distribution "t" follows a test statistic with statistical hypothesis. A student "t" test is most frequently functional when the test statistic would pursue a standard allocation if the value of a scaling term in the test statistic was identified.

Hypothesis: II

Null Hypothesis: Significant relationship connecting Gender and the convenient train timings is nil.

Table 3: Gender Convenient Train Timings (Student "t" Test)

Gender	*Convenience of the train timings*		*Statistical Inferences*
	Mean	*Standard deviation*	
Male	1.86	.767	t-value =.015
Female	1.69	.717	p value= .218>.05

The above table proves that the 0.05 is the "p" value which is superior as the null hypothesis has been acknowledge at 5% level with regard to the train timings and it is inferred that the male have more influence than the female sample respondents with the convenience of the train timings. Thus, the above results prove that there is no noteworthy dissimilarity amidst both the gender for the convenience of the train timings.

Hypothesis: III

Null Hypothesis: Absence of noteworthy relationship among educational qualification and the mode of tickets booking.

Table 4: Educational Qualification and Mode of Booking Tickets - Chi-square Test

Educational qualification	*Mode of booking tickets*			*Total*	*Chi- square value*	*'P' value*
	online	*Through counter*	*Free pass*			
Upto plus 2	10	21	9	40		
	(25.0%)	(52.5%)	(22.5%)	(100%)		
	[34.5%]	[36.2%]	[23.7%]		7.356	>0.05**
Degree and	13	18	22	53		.118
diploma	(24.5%)	(34.0%)	(41.5%)	(100%)		Df= 4
	[44.8%]	[31.0%]	[57.9%]			
PG and	6	19	7	32		
Professionals	(18.8%)	(59.4%)	(21.9%)	(100%)		
	[20.7]	[32.8%]	[18.4%]			
Total	29	58	38	125		
	(23.2%)	(46.4%)	(30.4%)	(100%)		

** 'p" value significant level at 5% level.

Inferences: The above table proves that the 0.05 is the "p" value which is better as the null hypothesis has been acknowledge at 5% level significance. The value of Chi-Square test highlights as 7.356, which is slighter with the degrees of freedom 4, and it proves .118 as significant value, which is superior than 0.05 and accepts the null hypothesis. Thus, the test proves that there is absence of noteworthy relationship amongst educational qualification and tickets booking mode.

Hypothesis: IV

Null Hypothesis: Lack of imperative relationship connecting occupation and Nilgiri Mountain Railway toy train draws tourists to escape summer heat.

Table 5: Occupation and Nilgiri Mountain Railway (NMR) Train Draws Tourists to Escape Summer Heat - Chi square Test

Occupation	*Nilgiri Mountain Railway toy train draws tourists to escape summer heat*					
	Definitely not	*Undecided*	*Definitely will*	*Total*	*Chi- square value*	*'P' value*
Government	8	9	11	28		
	(28.6%)	(32.1%)	(39.3%)			
	[23.5%]	[23.1%]	[21.2%]			
Private	12	14	11	37	4.692	>0.05**
	(2.4%)	(37.8%)	(29.7%)			. 584
	[35.3%]	[35.9%]	[21.2%]			Df= 6
Business	6	9	17	32		
	(18.8%)	(28.1%)	(53.1%)			
	[17.6%]	[23.1%]	[32.7%]			
Others	8	7	13	28		
	(28.6%)	(25.0%)	(46.4%)			
	[23.5%]	[17.9%]	[25.0%]			
Total	34	39	52	125		

** 'p" value significant level at 5% level.

Inferences

The above table proves that the 0.05 is the "p" value which is better as the null hypothesis has been acknowledge at 5% level significance. The value of Chi-Square test highlights as 4.692, which is slighter with the degrees of freedom 4, and it proves .584 as significant value, which is superior than 0.05 and accepts the null hypothesis. Thus, the test proves that there is absence of noteworthy relationship amongst educational qualification and tickets booking mode.

Hypothesis: V

Null Hypothesis: Important dissimilarity connecting annual income and Nilgiri Mountain Railway toy train draws tourists to escape summer heat.

Table 6: Annual Income and Nilgiri Mountain Railway (NMR) Toy Train Draws Tourists to Escape Summer Heat - One way Anova Descriptives

Annual income	*Mean*	*Standard deviation*
Upto Rs 2,50,000	1.76	.830
Income between Rs 2,50,001 to Rs 5,00,000	2.25	.769
Above Rs 5,00,001	2.41	.756

Inference

The mean and standard deviation of the three levels of annual income is highlighted in the above descriptive table. The mean value and the standard deviation for the sample respondents who belong to the annual income up to Rs. 2,50,000 is 1.76, while the annual income received by the sample respondents who fall under the category Rs 2,50,000- Rs 5,00,000 is 2.25 and .769, the mean value and standard deviation of the sample respondent who earn an annual income above Rs 5,00,000 is 2.4 and .756.

Table 7: One Way ANOVA

Nilgiri Mountain Railway toy train draws tourists to escape summer heat	*Value showing the squares*	*Degree of freedom*	*Mean Square*	*"F" value*	*Sig.*
Groups in between	8.378	2	4.189	6.812	.002
Groups within	75.030	122	.615		
Total	83.408	124			

Source: Primary Data

Inferences

The above One-way Anova of variance table shows the "F" value as 6.812, whereas it portrays that the value of "p" (.002) is lower than .05, so it acknowledges that there is an important significant dissimilarity connecting the income earned annually and the factors attracting the tourists to enjoy the ride on the Nilgiri Mountain Railway as the toy train which draws tourists to escape summer heat.

Inferences

The above multiple comparison table show a comparative study between the income level of the sample respondents, the income level falling below Rs 2, 50,000 has been compared with other two levels of income. It is inferred that income falling below Rs 2,50,000 has quite significant difference than the other two categories mentioned above. The annual income level between Rs 2, 50,001 – Rs 5, 00,000 has been compared with other two level of income. From this it can be inferred that Rs 2,50,001- Rs 5,00,000 differ significantly, up to 2,50,000 level of income but it does not differ significantly for above Rs 5,00,000 level of income. Thus, the annual income showing above Rs 5, 00,001 has been compared with the other two level of income to determine the significance level.

Table 8: Multiple Comparisons

Dependent variable	*Annual income of the respondents*	*Annual income of the respondents*	*Mean difference*	*Std. Error*	*Sig.*
Nilgiri Mountain Railway toy train draws tourists to escape summer heat	Income below Rs 2,50,000	Income between Rs 2,50,001 to Rs 5,00,000	-.493*	.166	.010
		Above Rs 5,00,001	-.649*	.189	.002
	Income between Rs 2,50,001 to Rs 5,00,000	Below Rs 2,50,000	.493*	.166	.010
		Above Rs 5,00,000	-.156	.174	.642
	Above Rs 5,00,001	Below Rs 2,50,000	.649*	.189	.002
		Income earned between Rs 2,50,001 to Rs 5,00,000	.156	.174	.642

Source: Primary Data

Table 9: Homogeneous Subset Table

Annual income	*N*	*Subset for alpha=0.05*	
		1	*2*
Upto Rs 2,50,000	37	1.76	
Rs 2,50,001 to Rs 5,00,000	56		2.25
Above Rs 5,00,000	32		2.41
Sig.		1.000	.651

Inferences

The calculations are showed as homogeneous subset in the above table. It shows that two subsets are formed. It proves that the sample respondents with up to Rs 2, 50,000 belong to the first subset. From this inference it is concluded that Nilgiri Mountain Railway toy train draws tourists as sample respondents who belong to the annual income uptoRs. 2, 50,000 to escape summer heat, in the lower end of range in Nilgiri Mountain Railway toy train, followed by the sample respondents who belong to the annual income earned in the second category.

Motivating Factors Attracting UNESCO'S World Heritage Rail Tourism Site, The Nilgiri Mountain Train (NMR)

The analysis which helps to decrease the data by its technique and authorize the researcher to scrutinize the concepts that is difficult to be measured is known as Factor Analysis. The motivating factors

(Twenty statements) attracting UNESCO's World Heritage Rail Tourism Site, for the Nilgiri Mountain Train (NMR) has been divided into five factors. For calculation and interpretation, the data collected from one hundred and twenty-five sample respondents were focused to principal component factor analysis with Varimax Rotation by means of the criterion that factors with eigen value greater than 1.00 were retained. Loadings exceeding 0.2 were considered for determining factors. In Factor analysis, the literature for a loading of 0.33 to be the minimum absolute value to be interpreted. This criterion is being used more or less by way of principles of convention.

Table 10: Statement Loadings of the Motivating Factors Attracting UNESCO's World Heritage Rail Tourism Site, Nilgiris Mountain Railway (NMR) in The Nilgiris District (Factor Analysis)

Variables as factors	*Loadings*	*Eigen values*	*Percentage of variance*
Factor 1			
Safety precautions of the train is very perfect	.662	2.396	11.980
Delightful pleasure on ranges of the mountain tunnels made my journey fulfilling.	.668		
Factor 2			
Reliable and safety journey for passengers.	.758	2.125	10.626
Services provided by the Southern Railways.	.575		
Relished the radiance of bright pea green climate, credible palm trees, unreserved cottages, pastoral charisma, and interesting mountainous life.	.641		
Exhaustive scenery of western ghat roads, forested mountains, flora, fauna, rivers and waterfalls flowing down from the hills to the plains.	.219		
Factor 3			
Dazzling colour, design and style of the Toy train.	.749	1.880	8.362
With peace of mind, I cherished the blossoming green silent nature, waterfalls around the mountains.	.622		
Adored the view of local people, munds, villages/hamlets.	.666		
Factor 4			
Aesthetics appearance of the Nigliri Railways Toy train	.788	1.672	8.362
Availability of the reservation of tickets.	.827		
Speed and unique sound of the Toy train.	.227		
Factor 5			
Reasonable Ticket Fare	.813	1.552	7.761
Delightful train journey along the nature made me to feel that earth, flora and fauna on the hills come together in harmony.	.579		

contd. table

Variables as factors	*Loadings*	*Eigen values*	*Percentage of variance*
I enjoyed the superior food services provided on time on the station platforms.	.433		
Factor 6			
Nilgiri Mountain Railways (NMR) journey made me to feel its UNESCO heritage site as a dignified brand name	.435	1.499	7.497
Enchanting experience on the Toy train made me to feel the good surveillance of many forests, woods, valley views, green crops, hill birds, wild plants and trees.	.784		
Factor 7			
Easy to book tickets	.652	1.283	6.414
The beauty of the alluring rainwater pouring down on the roof appears like a freezing and soaked sparkler.	.784		
Factor 8			
Travelling along the woods and mountains gave me joy, zeal and zest.	.938	1.306	5.17

The inferences of the Factor Analysis portray the various factors, item loadings, eigen value and percentage of variance explicated by each factor. The total variance yielded for eight factors for the Factor Analysis accounted as 67.219%. In Factor 1 there are two items and it has depicted 11.980% as the total variance. Amongst the available eight factors, the highest inconsistency which is very significant fall under factor one which highlights all the eye-catching factors attracting UNESCO's World Heritage Rail Tourism Site, Nilgiris Mountain Railway (NMR) in the Nilgiris District. In Factor 1, "Delightful pleasure on ranges of the mountain tunnels made their journey fulfilling" has been considered as the most noteworthy item. There are three statements under Factor 1, which shows that, "Reliable and safety journey for passengers" has been identified as a notable item. Among all the factors, there are three statements which fall under Factor 3, which portrays that, "Dazzling colour, design and style of the Toy train" has been acknowledged as the main and remarkable item. Out of all the other factors, Factor 4 has three main statements out of these "Availability of the reservation of tickets" has been measured as the chief and vital item. Factor 5 prove three statements, out of these, "Reasonable Ticket Fare" has been recognized as the essential item. Factor 6 established two statements, out of these, "Enchanting experience on the Toy train made them to feel the good surveillance of many forests, woods, valley views, green crops, hill birds, wild plants and trees" has been renowned as the main imperative item. Factor 7 has created two statements out of which "The beauty of the alluring rainwater pouring down on the roof appears like a freezing and soaked sparkler" is the main item. Factor 8 has shaped one statement that is "Travelling along the woods and mountains gave them joy, zeal and zest" is the chief item.

7. Results

The above analysis and interpretations portray the results of the socio-economic conditions showing the percentage analysis for one hundred and twenty-five sample respondents. Among 125 sample

respondents, the results show majority on the age (46.4%- (58), (56.0% -(70) on gender (56.8% - (71) on marital status, (42.4%- (53) on educational qualification, (29.6% - (37) on occupation, (44.8% - (56) on annual income, (58.4% - (73) on family size, and (38.4% (48) on family members as dependents.

According to the analysis portrayed under Chi-Square the educational qualification of the visitors is not associated with the modes of booking the tickets, even the uneducated people can book the tickets online modes. Likewise, the occupations of the sample respondents are not associated with occupation and journey. This toy train drags the tourists to the chill spot, so everyone can explore the journey during summer irrespective of their occupation. The income earned annually by the sample respondents has a significant difference as the Nilgiri Mountain Railway toy train draws tourists to escape summer heat, as per the Anova test. Not all levels of income people can come to Nilgiri Mountain Railway due to summer, as many lower level income people hesitate to spend for their leisure. The Pearson's Correlation test portrays that the visitor's age are correlated with the thrilling journey on the "Queen of the Hills". The findings of the student "t" test of this study reveals that the gender has no effect on the timing of the train are very convenient. Passengers need to opt the Niligiri Toy train journey according to their convenience, option, perception, and decision to choose their rail journey, according to their attitude and intentions to travel during the summer. The result of the factor analysis proves that the twenty attributes are reduced to eight factors. This analysis shows that 67.219% of the total variance is the value portraying the motivating factors which attract the UNESCO's World Heritage Rail Tourism Site, Nilgiris Mountain Railway (NMR) in the Nilgiris District**.**

Discussion

Indian Railways (IR), has its own rich antiquity withholding rich history crossing on hundred and sixty years as it boons a widespread gamut of concrete and elusive heritage, and occupy a exceptional place in our country's scale of heritage. Indian Railways has been striving constant and an attentive method to protect its existing inheritance, industrial wealth and to pass on it absolutely to our future generations. Proudly owning its Heritage Pride of trains on the four hills Indian Railways is honored to receive the UNESCO bestowed World Heritage Sites, and waiting for two more prides at two valleys. To continue its recognition and to entertain the tourists, it conserves museums, banquet and galleries parks as heritage places throughout the nation. It also shaped iconic destinations for tourists in New Delhi, Chennai, Mysore, Nagpur and Howrah. Nearly seventy lakhs foreign tourists and fifty lakhs domestic tourists visited Tamil Nadu in 2019. On the whole, it has been estimated that nearly sixty-nine lakhs foreign tourists made a journey towards Tamil Nadu as most of them visited for leisure and religious purpose.

8. Conclusion

There is a great entry of tourists into Tamil Nadu as the major tourism industry with 21.31% of domestic tourists and 21.86% of foreign tourists. More than one hundred and forty million tourists had visited our nation and the entry of tourists to Tamil Nadu as shown more than six hundred and ten million domestic tourists visit in the year 2020. Though there are many UNESCO's World Heritage Tourism Sites in Tamilnadu, the Nilgiri Mountain Railway (NMR) gains its momentum on the Nilgiri

Hills as Blue Mountain, Queen of the Hills in the Nilgiris. The attraction of this toy train drags all the tourists with glee to relish the pleasant weather, fresh eucalyptus scented air, Badugas hamlet, Todas munds, flora and fauna of the hills, rocky terrain, ravines, tea estates, green cultivation lands, valley views, the connecting railway stations like Kallar, Adderly, Runnymede, Coonoor, Wellington, Aravankadu, Ketti, Lovedale. Udhagamandalam is always a delight with zest and zeal.

8.1. Limitations of the Study

This study is limited to the UNESCO's World Heritage Rail Tourism Site - Niligirs Mountain Railway (NMR) of the Queen of the Hills/Blue Mountains in the Nilgiris District and the findings, and conclusion of this present study is applicable to the same. Analysis and interpretations of the data collected through questionnaire and the accuracy of the findings entirely depends upon the correctness of such data. The results of this study may differ from other hill station trains.

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Behavioral Intention as Mediating Driver Towards Acceptability of UPI and E-wallet for Formalization of Economy

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Digital financial inclusion, Behavioral intention, UPI, E-wallet, Financial platforms

JEL Classification

G1, G2, G5, H1

Abstract: Formalizing the economy is essential for national development, combating corruption and money laundering, and ensuring fair income distribution. Digital financial inclusion has emerged as a solution to these issues, particularly in urban areas. However, it is crucial to also prioritize rural India. Therefore, studying the factors that influence the use of digital financial platforms like UPI and E-wallet is necessary to provide proper financial services to rural communities. So, the study aimed to find the factors affecting the use of the UPI and E-wallet and their impact on the formalization of economy. In the study bibliometric analysis is done through VOS viewer software for finding research gaps. PLS-SEM is used to find the relationship among variables and the effect of independent latent variable on the dependent construct. From the study it is found that direct effect of the digital financial inclusion on the acceptance of UPI and E-wallet system and lead to formalization of economy.

1. Introduction

From tackling the issue of black money to a greater financial inclusion objective, the Indian financial system has taken many measures to reach out to its objectives. After independence, India has marked a severe financial distress with high level of corruption putting a large mass of people under the poverty line. Many reforms were introduced from time to time to rebuild a strong financial system, which can include as many as Indian in the purview of financial reach. But unfortunate for the India, many changes were made on paper applied to the urban masses and least implemented in the rural areas, where the true and large India resides. The unfair reach to finances made the rich richer and the poor, poorer and creating an environment that fills with corruption, power and wealth centricity and ultimately the crimes. Only better financial inclusion system can lift of the poverty in the country (Inoue, 2019).

A strong need towards the formalization of economy is very much an important aspect for the country. The formalization just not only helps in tracking the money flow but can also reduce much of the corruption (Eldomiaty *et al.*, 2020). But the lack of vision towards formalization of economy resulted in low development of poor mass, wealth concentration in few hands and inaccessibility of finances to the rural poor mass. The parallel economy is also an important aspect of non-formalization of Indian economy. With the use of UPI and e-wallet transaction, the economy has seems to be moving in the direction of formalization (Moyo, 2022), which can help in tax collection, more traceability of money, reduction in black money, corruption, and the financial criminalization.

But the success of the use UPI and e-wallets still remains with the urban masses but not much in the rural areas, where true and large India lives. The successful in the use of UPI and E-wallet platforms is incomplete without covering the large rural mass in the financial system. So it is necessary to understand the usefulness of the UPI and E-wallet platforms, which can be marketed to rural people to encourage them to use the UPI and E-wallet system in the future. It is also necessary to understand the factors, which encourages the urban mass to use the UPI and E-wallet, which again can be used to study and various advertising strategies can be made to encourage people to use UPI and E-wallet, so that formalization of economy can be achieved.

So the current study intends to find the effect of the factors of digital financial inclusion towards acceptability of formalized transaction and to study the behavioral factors that encourages people to use such UPI and E-wallet platforms for financial stability of people as well as the nation (Sethy and Goyari, 2022). The study also intent to find the impact of COVID-19 and demonetization on the use of the digital financial inclusion platforms, which can enhance the financial security and food security of the nation (Sharma *et al.*, 2021).

1.1. Problem Statement

A strong financial system and formalized economy are the parameters for nation's developments. Western nations have successfully evolved components of financial system and implemented in an effective way to have economic benefit out of it (Khan *et al.*, 2022). But, India still fall short of measures to make its financial system effective against the black money and parallel economy, which ended in exploitation of financial resources and concentration of wealth in few hands. But the digital financial services made the financial services more convenient and accessible. The UPI system and the e-wallet system made the transaction easier and useful for multipurpose activities. As banks were associated with it and the transactions were operated through the bank accounts, so the transaction were even more formalized and traceable. This traceability of financial transaction also helps in supervision and control over the illegal flow of money and reduced the corruption to some extent. But the vulnerability of these innovative financial platforms is restricted to urban mass only and still impregnable to the rural areas. So it is imperative to study the reasons behind the acceptability factors for rural people to use the UPI and e-wallet system in the demonetization and pandemic era, so that we can use those variables as strategies in encouraging the rural mass. In this context the research question is "Does behavioral intention act mediating in the effect of digital financial inclusion towards formalization of economy through acceptance of UPI and e-wallet payment platforms?"

1.2. Objectives of the Study

1. To explore the variables that affects the formalization of transaction through acceptability of UPI and E-wallet platforms.
2. To elucidate the effect of the attribute of digital financial inclusion on the use of UPI and E-wallet platforms for formalization of financial transactions.
3. To reveal the importance of behavioral intention towards the accessibility of UPI and e-wallet payment systems.

1.3. Hypotheses of the Study

H_{01}: The accessibility features of UPI and E-wallet positively affect the formalization of financial transactions.

H_{02}: Digital accuracy and safety influence positively towards formal transactions.

H_{03}: Mobile financial services help in acceptability of UPI and E-wallet transactions.

H_{04}: Utility services and reward system attracts customers towards use of UPI and E-wallet transactions.

H_{05}: Innovation acceptance drives human behavior towards formalizing financial transactions.

H_{06}: Social influence pursues behavioral sentiments to accept the UPI and E-wallet platforms.

H_{07}: Technological readiness assists the human behavior to accept formalization of transactions through UPI and E-wallet platforms.

2. Theoretical Framework

2.1. Bibliometric Analysis

The bibliometric analysis was carried out to find the research gap of the as well as to show the relationship among the variables. The CSV file from SCOPUS indexed data base was downloaded with keywords

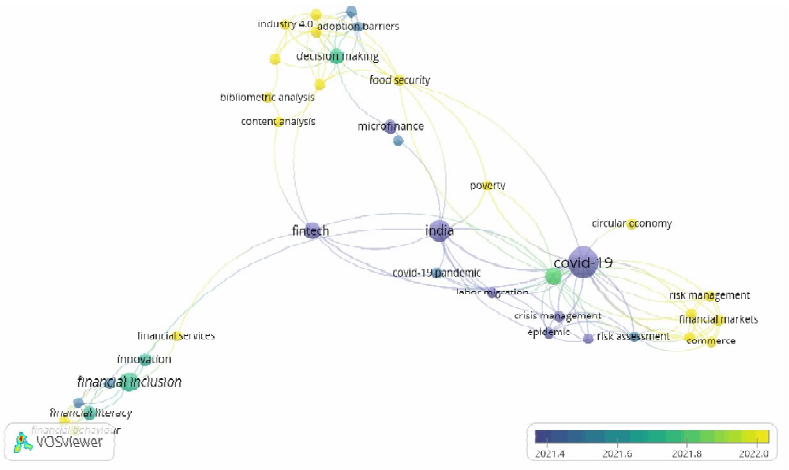

Figure 1: Bibliometric Network

like covid-19, India, Pandemic, fintech and financial inclusion. The CSV file is operated through the VOS Viewer software to present network diagram showing linkages among the variables and the unlinked variables.

The above figure shows that there is an interrelationship between financial inclusion with FinTech in Indian prospective but not much research work has been conducted in relation to COVID-19 pandemic. In the current study we expect to explore the relationship between the pandemic and the use of digital financial platform for providing better financial services. We found that the research on influence of behavioral factors with relation to financial inclusion is very insignificant. It has also been seen that the financial inclusion is not yet related to the COVID-19 pandemic, whereas statistical report says that the UPI payments transaction amount is increased in the pandemic and post pandemic period.

2.2. Through Literature Review

2.2.1. Digital Financial Inclusion and Formalization of Economy

With the greater objective of financial inclusion, the digital platforms are providing greater support to achieve the objective to develop the nation and livelihood of people (Raza et al., 2019). Starting from physical banking to the payment banking system, every aspect of the financial inclusion platforms played their respective role in providing masses with financial services (Bongomin *et al.*, 2017). But the revolutionary platforms like UPI and the mobile application based e-wallet platforms have penetrated to the rural areas and provided financial services to a large mass of people with easier way of operation. Human development index is often measured by the success of the financial inclusion scheme. The physical propinquity, availability of digital financial inclusion platforms, ease of use, affordability of transaction cost and usability of platforms are the features of digital financial inclusion, which help in the growth of financial system, economy and livelihood of the people (Nandru and Rentala, 2020).

2.2.2. Accessibility of Financial Inclusion Platforms and Formalization of Economy

With user friendly application, the UPI and E-wallet platforms have delivered their task. But the success of platforms acceptability goes to the accessibility of the platforms. The applications are very innovative, easy to use, simple to understand but the most important aspect is that it can run through mobile with low band of internet availability and in some cases without internet (Omeje *et al.*, 2022). A country like India, where a greater mass lives in the rural areas and providing them with financial services sounded impossible as the commercial banks have to face lower profitability situation due to higher initial cost. But the introduction of UPI and E-wallet platforms solved the accessibility issue with the help of mobile based application. (Alam *et al.*, 2021) explained that e-wallet is the easier and accessible medium of fund transfer system, which connects the customer to customer with safety features but must make firewall to deal with new problems of malware and phishing software eliminating the financial frauds.

2.2.3. Digital Accuracy and Safety Mechanism of UPI and E-wallet Platforms and Formalization of Economy

Safety is the major concern among to user to use the digital financial platforms but the dual protection system of the UPI and E-wallet platforms makes the application more secure, which brings trust

among the users to use the systems. The payment through of digital platforms is very precise, which encourage the users to use UPI and E-wallet platforms. (Undale *et al.*, 2021) explained that safety feature of the UPI and E-wallet brings the trust among the users to use the innovative digital financial platforms. (Ozili, 2021) found that due to reduction in the use of credit and debit card for payment, replacing those with UPI based payment system reduce the financial risk associated with it.

2.2.4. Mobile Financial Services of Financial Inclusion Platforms and Formalization of Economy

The low cost financial transactions and most of the banking operation through the UPI and E-wallet system makes it a convenient (Myeni et al., 2020). UPI-based payment transactions can be operated anywhere with a less-band internet connection and through messages; the transactions are confirmed with details. Fund transfer from bank account to bank account is also very easy, which implies that the UPI based application is more useful for operating most of the banking based financial transactions. Umeokeke *et al.* (2017) explained in his study that the e-wallet system is more mobile and its acceptability as payment medium with many point of sale makes it more useful. Many street vendors use the UPI and E-wallet platforms for payment acceptance, so customers must use the UPI and E-wallet platforms for financial services (Nandru et al., 2021).

2.2.5. Utility Services and Reward System of UPI Transactions and Formalization of Economy

The utility services provided by the UPI and the E-wallet based application like the electricity bill, telephone bill, water bill, internet bills and shopping bills payment make the platforms more usable (Uduji et al., 2019). These additional services over the normal financial services make the UPI system more exploitable. Along with that the reward system associated with UPI platforms show case its philanthropic idea with the initiation of digital financial inclusion, which attracts much of the customers to use the systems.

2.2.6. Behavioral Intention and Formalization of Economy

Human perception and human behavior always have been the deciding factors, when it comes to decision making. Human behavior that influences the decision is driven by its intention regarding concern elements. (Candiya *et al.*, 2017) showcased that attitude, intention, behavior and knowledge regarding the concern factor always affects the decision making. So, financial literacy, which solidifies the intention positively help in the formalization of economy as they accept the digital financial inclusion schemes.

2.2.7. Innovation Acceptance and Formalization of Economy

Adoptability of new technological innovation requires will power of people, which is associated with the behavioral factor of an individual. The orthodox way of financial services is challenged by the UPI application, which initially unaccepted for the use but the new behavioral intent generated among individual accepted the use of the modern system (Kumar *et al.*, 2021). Building cognitive abilities enhances the innovation acceptance among the consumers. But the intermediaries must make sure to educate people to develop acceptability of the innovation (Okello *et al.*, 2018).

2.2.8. Social Influence and Formalization of Economy

Being a social animal, human beings are often influenced by the peer group, friends, and the expert group. When certain factors persuade the people in our surroundings, it also affects our behaviour and our decision (Evans, 2018). In this regard, the large use of the UPI and E-wallet system in our society and surrounding influence us to use UPI platforms instead of cash based transaction. Social acceptability also influences the financial inclusion platforms' individual acceptability for financial services (Amari and Anis, 2021).

2.2.9. Technological Readiness and Formalization of Economy

The transition from cash based economy to a digital based economy needed the technological revolutions. In the recent past, India worked on many projects like 4th generation internet facilities, with digital platforms operating with mobile-based applications making the nation more technologically ready. This readiness affects the behavior of Indian user to shift their preference from cash transaction to digital transactions. In the demonetization time the recognition of the e-wallet system got faster because of the technological readiness of the people with 4^{th} generation internet speed and equipped with greater feature smart phones. The technological readiness brings effect to behavioral intention which induce user to use more e-wallet system than to carry cash for financial transactions. This technological readiness was effective because many banks enable them with technology (Nagdev *et al.*, 2021).

3. Research Methodology

The research adopted the causal research design with interpretivism philosophy. Cross sectional primary data is collected through a structured questionnaire, where the variables are extracted from different literature. The data was collected from four stratum of Odisha through the stratified random sampling methods by making each directional zone of Odisha as one stratum. A total of 430 responses were collected. The scale used in the questionnaire is the 5 point likert scale. Concerning the research objective and the hypothesis, a conceptual model is created and tested through the Partially Least Square Structural Equation Modeling (PLS-SEM) (Chin et al., 2020). In the current study the researcher investigates the direct influence of the Digital Financial Inclusion (DFI) on the Formalization of Transaction (FOT). Further it is also investigated the mediation role of the Behavioral Intention (BEI) among the relationship of DFI and the FOT. In order to access the higher order measurement model in the PLS -SEM the two stage approach is applied (Sarstedt *et al.*, 2019). The lower order measurement models are the reflective constructs and the higher order measurement models are the formative constructs. Here the values of the lower order constructs are taken for the accessing the higher order constructs in the second phase (Tyagi *et al.*, 2022). To computing the path analysis all, the direct, indirect and the total effect are accessed and interrelationship and the effects are shown accordingly as per the calculation as shown in the model figure 2 and explained in the discussion part.

3.1. Sample and Respondent Profile

(Cochran, 1963) the minimum sample size for a population of over a hundred thousand is 384. A total of 430 responses were collected and analyzed. 308 respondents are male and 122 are female.

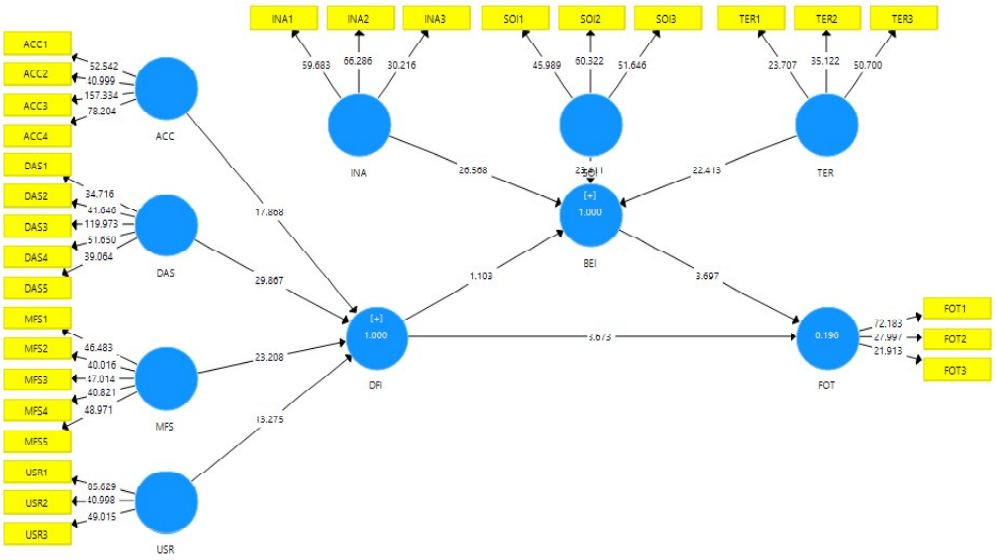

Figure 2: Structural Model

254 respondents are single and 176 respondents are married. 19 respondents are undergraduate, 134 are graduates, 185 are post graduate and 92 are having professional degree. 77 respondents have government service, 63 have private jobs, 127 have their own business, 69 are from professional service and 94 are students. 167 respondents have income less than 20000, 68 respondents have income between 20001-40000, 95 respondents are between the income group of 40001-60000, 56 are between 60001-80000, 35 are between 80001-100000 and 9 respondents are having income over 100001.

4. Findings and Discussion

4.1. Construct Validity and Reliability of the Lower-order Construct

The lower-order reflective constructs of the model's validity and reliability are investigated by applying Cronbach's Alpha, rho A, composite reliability (CR), and average variance explained (AVE) (Hair et al., 2019) as presented in table-1. Because it indicates the degree to which each construct is internally consistent, Cronbach's Alpha is an indicator of the construct's reliability. Because the values of Cronbach's Alpha for all of the constructions are greater than 0.7, the constructs are reliable. Again, the rho A values for all of the constructs are higher than 0.7, indicating that the constructs are reliable. The value of the CR greater than 0.7 is shown in Table 1, which further reveals again that the constructs are reliable. The average variance explained (AVE) of each construct is more than 0.5, which shows that the constructs have satisfactory convergent validity (Hair *et al.,* 2019). Hence, all the parameter of the construct validity and reliability is satisfied.

Table 1: Construct Reliability and Validity of the Lower-order Components

Constructs	*Cronbach's Alpha*	*rho_A*	*CR*	*AVE*
ACC	0.864	0.867	0.907	0.71
DAS	0.851	0.853	0.894	0.627
FOT	0.721	0.73	0.844	0.643
INA	0.803	0.813	0.884	0.718
MFS	0.896	0.897	0.923	0.707
SOI	0.832	0.832	0.899	0.748
TER	0.742	0.749	0.853	0.66
USR	0.834	0.841	0.9	0.751

4.2. Discriminant Validity

The assessment of discriminant validity is shown in Tables No. 2 and 3. The Fornell and Larcker criteria (Fornell & Larcker, 1981) and Henseler's Heterotrait-Monotrait (HTMT) (Henseler et al., 2015) criteria are used to test the discriminant validity analysis (Hasan and Bao, 2022).

Table 2: Fornell and Larcker Criteria

	ACC	*DAS*	*FOT*	*INA*	*MFS*	*SOI*	*TER*	*USR*
ACC	0.843							
DAS	0.494	0.792						
FOT	0.233	0.331	0.802					
INA	0.208	0.301	0.314	0.847				
MFS	0.367	0.664	0.283	0.297	0.841			
SOI	0.257	0.352	0.339	0.534	0.402	0.865		
TER	0.243	0.248	0.261	0.528	0.204	0.444	0.812	
USR	0.394	0.503	0.307	0.167	0.401	0.212	0.117	0.867

According to the Fornell and Larcker criteria, it has been determined that the square root of the AVE for each of the constructs is more than the correlation estimate for each of the constructs. This indicates that the constructs are notably distinct from one another (Fornell and Larcker, 1981).

In this study, the Heterotrait–Monotrait (HTMT) correlation is tested along with the Fornell and Larcker criteria to find a greater understanding of the discriminate validity. Most researchers concur that 0.9 is the greatest possible HTMT value that is acceptable. In the current study, the HTMT values ranged from.0147 to.758. So, the test of the discriminate validity of this study was a success (Henseler *et al.,* 2015).

Table 3: Henseler's Heterotrait-Monotrait (HTMT)

	ACC	*DAS*	*FOT*	*INA*	*MFS*	*SOI*	*TER*	*USR*
ACC								
DAS	0.569							
FOT	0.293	0.419						
INA	0.251	0.361	0.404					
MFS	0.412	0.758	0.354	0.347				
SOI	0.303	0.419	0.439	0.648	0.465			
TER	0.304	0.312	0.355	0.677	0.247	0.563		
USR	0.456	0.589	0.388	0.196	0.463	0.253	0.147	

4.3. Second order Formative Measurement Model

PLS-SEM is the most viable approach for access the second-order formative constructs of the structural model. On the basis of the convergent validity, indicator collinearity, statistical significance, and relevance of the indicator weights, the second-order formative measurement model is evaluated.

Table 4: Reliability and Validity of the Second Formative Measurement Model

HOCs	*LOCs*	*Outer waights*	*t value*	*p value*	*outer loading*	*P value*	*VIF*
DFI	ACC	0.218	1.833	0.067	0.648	0	1.377
	DAS	0.386	3.068	0.002	0.89	0	2.219
	MFS	0.46	4.475	0	0.869	0	1.813
	USR	0.179	1.398	0.162	0.644	0	1.402
BEI	INA	0.339	3.78	0	0.787	0	1.641
	SOI	0.675	7.531	0	0.929	0	1.474
	TER	0.164	1.674	0.094	0.642	0	1.46

The variance inflation factor (VIF) is frequently applied to evaluate the collinearity amongst formative indicators. The VIF value is less than 3, showing that there is no collinearity issue with the formative constructs, as revealed by the study. The outside weights of the three factors ACC, USR, and TER are not statistically significant. However, we continue to evaluate these components for the model because there are sufficient theoretical evidences and all the outer loadings of the constructs are over 0.50 and statistically significant (Reinartz *et al.,* 2009).

4.4. Assessment of the Structural Model

Table 5 :R Square Value and Q Square Value

	R Square	*R Square Adjusted*	Q^2
BEI	0.189	0.187	0.108
FOT	0.192	0.188	0.166

As there is no collinearity issue, the current study evaluates the coefficient of determination (R2) of the endogenous construct (s) (Hair *et al.*, 2016). As a measure of the model's explanatory ability, the R2 quantifies the variance that is explained by each of the endogenous components. Here the $R^2$is less than the 0.25 hence the independent variables are low weak explanatory power on the dependent variables. Q2 (Hair *et al.*, 2016) is another parameter that can be used to determine how accurate the PLS path model is at making predictions. This metric is based on a method called "blindfolding," which removes single points from the data matrix, replaces them with the mean, and estimates the model parameters. Here, Q^2 value BEI and FOT is less than 0.25 hence, there is weak prediction of independent variable over the dependent variable.

Table 6: Direct Effects

Hypothesis	*Relation*	*IV effect on DV*	*t value*	*P Values*	*Decision*
H_1	BEI -> FOT	0.271	3.897	0	Supported
H_2	DFI -> BEI	0.435	7.533	0	Supported
H_3	DFI -> FOT	0.246	3.152	0.002	Supported

With considering the table-6 it is found it is revealed that the all the hypothesis applied in the study to find out the direct relationship of the dependent variable and the independent variables are supported (Richter et al., 2020). Here the effect of the BEI on the FOT is 27.1 %, DFI on BEI is 43.5% and DFI on FOT is 24.6%.

Table 7: Direct, Indirect and Total Effect

Relation	*Direct effect*	*Indirect effect*	*Total effect*	*VAF*	*P Values*	*Decision*
DFI -> BEI -> FOT	0.246	0.118	0.364	0.324	0.001	Partial mediation

The table number 7 showing that the value of VAF (variance accounted for the indicator) (Joseph F. Hair *et al.,* 2016) is less than 0.80 and more than 0.20 , hence it is revealed that the mediation effect of BEI on the DFI and the FOT is partial mediation . However, the direct effect of the study is greater than the in direct effect hence the mediation effect on the relation have not influence to a greater extent (G. F. Khan *et al.,* 2019).

5. Conclusion

Starting from the demonetization period to the pandemic period, the importance of the digital platforms for financial services are highly recognized and used to bring a successful financial revolution within very short span of time (Ramachandra and Wells, 2020). Basic financial transactions are now seems to be very difficult without the digital financial platforms like UPI based applications and the E-wallet

applications (Nandi *et al.*, 2022). It has brought ease in having financial transaction and due to the extent of use of these platforms; the economy has attested a positive growth. The study with a moral objective to encourage the rural masses of people to use the application for having financial services, conducted the research for having the preferential factors of UPI and E-wallet based application. The UPI based applications are accessible, financial services are mobile in nature, safer and accurate and a wide variety of utility features attracts the customers to accept the system and use it. But the acceptability increases with increase in the behavioral intention of the user, which is driven by is innovative acceptance mechanism, induced by social influence and technological readiness. Policy makers need to make strategies viewing the impact of these factors, so that better strategies can be made to encourage rural mass, which are deprived from getting the financial services. With better reach of financial services, the objective of financial inclusion schemes can be achieved with the use of the digital platforms like UPI and E-wallet (Lenka and Barik, 2018).

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LIFETIME ACHIEVEMENT AWARDEES
OF
ORISSA COMMERCE ASSOCIATION

Year	Venue of the Conferences	Awardees
2017	Fakir Mohan University, Balasore	Prof. Girija Prasad Acharya Prof. Pramod Kumar Sahu
2018	Ravenshaw University, Cuttack	Prof. Ramakanta Jena Prof. Gunanidhi Sahoo
2019	Utkal University, Bhubaneswar	Prof. Umesh Charan Patnaik Mr. Tahalu Sahu
2020	KIIT University, Bhubaneswar	Prof. Pradipta Chandra Tripathy Prof. Malay Kumar Mohanty
2021	L. N. College, Jharsuguda	Prof. Sambhu Prasad Mishra Prof. Damodar Biswal
2022	Odisha State Open University (OSOU), Sambalpur	Mr. Ajodhya Prasad Nayak Prof. Jagannath Panda

[#] This award is given on the overall achievements/contribution in the field of business education in Odisha and involvement for the upliftment of the Orissa Commerce Association.

- A senior faculty above 65 years of age is eligible.

PROFESSOR MALAY MOHANTY ACADEMIC LEADERSHIP AWARD

Year	Venue of the Conference	Name of the Awardee
2022	Odisha State Open University (OSOU), Sambalpur	Prof. Arka Kumar Das Mohapatra Vice-Chancellor Odisha State Open University (OSOU), Sambalpur

Criteria(s) for consideration of the award on the contribution in the fields of:

1. Academic Excellence in Teaching and Teaching Pedagogy
2. Research, Publications of Research Articles and Books
3. Academic and Institutional Leadership
4. Ethical Administration in Academic Institutions
5. Institution Building and Innovations

- A faculty must be above 40 years of age but must not be above 60 years of age.

AWARDS GIVEN BY ORISSA COMMERCE ASSOCIATION

1. OCA Lifetime Achievement Award
2. Professor Malay Mohanty Academic Leadership Award
3. Professor UC Pattnaik Promising Faculty Award (to a faculty in mid career, popular teacher and with good research work)
4. Professor Malay Kumar Mohanty Best Research Paper Award of the Conference of the Year (including the seminar and all technical sessions taken together).
5. Baldev Kar Award to the Best Research Paper of each Theme presented in the Conference.
6. Major (Dr.) S. A. Taher Best Organiser Award for Outstanding Organising Ability.

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OF
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2.	Prof. Umesh Charan Patnaik	2019-F02
3.	Prof. Ranjan Kumar Bal	2019-F03
4.	Mr. Tahalu Sahoo	2019-F04
5.	Mr. Baldev Kar	2019-F05
6.	Prof. Sanjay Kumar Satapathy	2019-F06
7.	Prof. Prabodh Kumar Hota	2019-F07
8.	Major S A Taher	2019-F08
9.	Prof. Sarbesh Kumar Mishra	2019-F09
10.	Prof. Srinivas Subbarao Pasumarti	2019-F10
11.	Prof. Sukanta Kumar Baral	2019-F11
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21.	Prof. Ambika Prasad Pati	2021-F21
22.	Dr. Abhay Kumar Panda	2021-F22
23.	Dr. Amiya Kumar Mohapatra	2021-F23

INCUMBENCY CHART OF OFFICE BEARERS

Orissa Commerce Association (OCA) started in 1970 in G. M. College Sambalpur, which was the first College to have B. Com. as an under Graduate Course in Orissa. The pioneering founding members of OCA are:

1. Prof. Paresh Chandra Ray
2. Prof. Suryakanta Das
3. Prof. Batakrushna Mohanty
4. Prof. Durga Prasad Nayak

Sl. No	Year	Venue	President	Secretary	Managing Editor of Orissa Journal of Commerce	Number of Issues Published
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2.	1971	Khalikote College, Berhampur	Prof. P.C.Ray, Secretary, Board of Secondary Education, Orissa	*	*	*
3.	1973	Ravenshaw College, Cuttack	Prof. P.C.Ray, Secretary, Board of Secondary Education, Orissa	*	*	*
4.	1974	G.M. College, Sambalpur	Prof. (Dr) Surya Kant Das, Professor of Commerce, Utkal University, Bhubaneswar	Prof. Batakrushna Mohanty, Prof. of Commere, G. M. College, Sambalpur	Dr. Abhaya Kumar, Reader, Department of Commerce, Utkal University	One Issue
5.	1976	Utkal University, Bhubaneswar	Mr. M.P. Modi, I.A.S. Managing Director, IDC	*	*	*
6.	1977	Bhadrak College, Bhadrak	Prof. (Dr) Surya Kant Das, Professor of Commerce, Utkal University, Bhubaneswar	*	*	*
7.	1978	S.C.S. College, Puri	Prof. Batakrushna Mohanty, Principal, G.M. College, Sambalpur	*	*	*
8.	1980	Berhampur University, Bhanja Vihar, Berhampur	Prof. Batakrushna Mohanty, Principal, G.M. College, Sambalpur	*	*	*
9.	1981	K.S.U.B. College, Bhanjanagar	Prof. Ganga Prasad Panda, Principal Lingaraj Law College, Berhampur	*	*	*
10.	1982	Dhenkanal College, Dhenkanal	Shri Durga Prasad Nayak, Principal, Sonepur College, Sonepur.	Dr. Girija Prasad Acharya	Dr. Pramod Ku. Sahu, Berhampur University	One Issue
11.	1983	Ispast College, Rourkela	Prof. Bijay Narayan Pattnaik, Utkal University, Bhubaneswar	Dr. Girija Prasad Acharya	*	*
12.	1985	F.M. College, Balasore	Prof. (Dr.) J.J. Rao, Ravenshaw College, Cuttack	Dr. Girija Prasad Acharya	*	*
13.	1986	Ganjam College, Ganjam	Prof. (Dr) Ramakanta Jena, Dean, Faculty of Commerce, Utkal University, Bhubaneswar	Dr. Girija Prasad Acharya	Dr. Ghanashyam Panda, Berhampur University	One Issue

Sl. No	Year	Venue	President	Secretary	Managing Editor of Orissa Journal of Commerce	Number of Issues Published
14.	1987	L.N.College, Jharsuguda	Prof. (Dr) Pramod Ku. Sahu, Professor , Berhampur University, Berhampur	*	Dr. Ghanashyam Panda, Berhampur University	One Issue
15.	1988	Dhenkanal College, Dhenkanal	Prof. Sambhu Prasad Mishra, Professor of Commerce, G.M. College, Sambalpur	*	Dr. Ghanashyam Panda, Berhampur University	One Issue
16.	1990	Dept. of Commerce, Berhampur University	Sri C. S. Patro, Head, P.G. Department of Commerce, Khalikote College	Dr. Swaroop Ch. Sahoo	Dr. Gunanidhi Sahoo, Principal, Khalikote, Berhampur	One Issue
17.	1994	Bhadrak College, Bhadrak	Prof. (Dr) Gunanidhi Sahu, Principal, Khalikote College, Berhampur	Dr. Jagannath Panda	Dr. Swaroop Ch. Sahoo	One Issue
18.	1995	S.C.S. College, Puri	Prof. (Dr) Girija Prasad Acharya, Professor of Commerce, Ravenshaw College, Cuttack	Dr. Bidhu Bhusan Panigrahi,	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
19.	1997	Womens' College, Jharsuguda	Shri Ayodhya P. Nayak, BJB College, Bhubaneswar	Dr. Damodar Biswal, S.C.S. College, Puri	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
20.	1998	Prananath College, Khurda	Prof. (Dr.) Pradeep Chandra Tripathy, Professor , Utkal University, Bhubaneswar	Prof. Tahalu Sahoo, Principal Womens College, Jharsugara	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
21.	1999	Khalikote (Auto) College, Berhampur	Prof. (Dr) R.P. Choudhury, Principal, Khalikote College (Auto), Berhampur	Malay Kumar Mohanty, Ravenshaw College (Auto)	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
22.	2000	Ispat College, Rourkela	Sri Minaketan Mohapatra Principal, Dehenkanal College	Malay Kumar Mohanty, Ravenshaw College (Auto)	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
23.	2001	Maharshi College of Natural Law, Bhubaneswar	Prof. (Dr) Damodar. Biswal, Professor, Ravenshaw College (Auto), Cuttack	Malay Kumar Mohanty, Ravenshaw College (Auto), Cuttack	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
24.	2004	Kendrapara College, Kendrapara	Prof. (Dr) Jagannath Panda, Professor Berhampur University, Berhampur	Prof. Ranjan Kumar Bal, Utkal University	Prof. Pramod Ku. Sahu, Berhampur University	One Issue
25.	2005	V.N.College, Jajpur Road	Prof. (Dr) Umesh Ch. Pattnaik, Professor Berhampur University, Berhampur	Prof. Ranjan Kumar Bal, Utkal University	Prof. Jagannath Panda, Berhampur University	One Issue
26.	2006	Rayagada College, Raygada	Sri Tahalu Sahu Principal Belpahar College, Belpahar	Prof. Ranjan Kumar Bal, Utkal University	Prof. Jagannath Panda, Berhampur University	One Issue
27.	2007	P.G. Department of Commerce Utkal University, Bhubaneswar	Prof (Dr) Samson Moharana, Professor Utkal University, Bhubaneswar	Prof. Kishore Ch. Rout, Berhampur University	Prof. Jagannath Panda, Berhampur University	One Issue
28.	2008	Fakir Mohan Autonomous College, Balasore	Dr. Arun Kumar Barik, Head, Department of Commerce, Vyasanagar College, Jajpur Road	Prof. Kishore Ch. Rout, Berhampur University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
29.	2009	Govt. Autonomous College, Angul	Maj (Dr.) Abhay Kumar Panda, Principal, Fakir Mohan Autonomous College, Balasore.	Prof. Kishore Ch. Rout, Berhampur University	Prof. Ranjan Kumar Bal, Utkal University	One Issue

Sl. No	Year	Venue	President	Secretary	Managing Editor of Orissa Journal of Commerce	Number of Issues Published
30.	2010	Department of Commerce, Ravenshaw University	Shri Baladev Kar, Principal, Govt. College (Auto), Angul	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
31.	2011	P. G. Department of Commerce, Berhampur University	Prof. Malay Kumar Mohanty, Former Registrar, Ravenshaw University, Professor G. M. College, Dean Sambalpur University	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	Two Issues
32.	2012	P. G. Department of Commerce, Utkal University	Prof. P. K. Biswasray, Professor , Berhampur University	Dr. Kshiti Bhusan Das, Utkal University	Prof. Ranjan Kumar Bal, Utkal University	One Issue
33.	2013	Choudwar College, Choudwar	Prof. Prasant Kumar Sahu, Vice- Chancellor, Utkal University	Prof. Kshiti Bhusan Das, Utkal University	Prof. Malay Kumar Mohanty	One Issue
34.	2014	P. N. (Auto) College, Khurda	Prof. Ranjan Kumar Bal, Professor, Utkal University	Prof. Kshiti Bhusan Das, Utkal University	Prof. Malay Kumar Mohanty	Two Issue
35.	2014-15	Kendrapada (Auto) College	Prof. Kshiti Bhusan Das, Professor, Utkal University	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Two Issues
36.	2016	Belpahar College, Belpahar	Prof. Girish Kumar Patra, Kendrapada (Auto) College	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Two Issues
37.	2017	F. M. University, Balasore	Prof. Jayanta Kumar Parida, Professor, Utkal University	Dr. G. K. Panigrahi	Prof. Malay Kumar Mohanty	Three Issues
38.	2018	Ravenshaw University, Cuttack	Prof. Bhagaban Das, Professor, F. M. University	Major (Dr) S. A. Taher	Prof. Malay Kumar Mohanty	Four Issues
39.	2019	P. G. Department of Commerce, Utkal University	Prof. Sanjay Kumar Satapathy, Professor, Ravenshaw University	Major (Dr) S. A. Taher	Prof. Malay Kumar Mohanty	Four Issues+One Special Issue
40.	2020	KIIT, Deemed to be University,	Prof. P. K. Hota Head P.G. Dept. of Commerce, Utkal University	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues+One Special Issue
41.	2021	L.N.College, Jharsuguda	Prof. Sasmita Samanta, Pro-Vice Chancellor, KIIT University, Bhubaneswar	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues
42.	2022	OSOU Sambalpur	Sri Narendra Kumar Panda	Major (Dr) S. A.Taher	Prof. Malay Kumar Mohanty	Four Issues

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b) The title of the paper should be followed by name, designation, affiliation, email and mobile number of the author(s). The surname of the author(s) should be marked in blue colour.

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