Hybrid Model of Teaching-Learning is Total Chaos: An effect of Reverse Halo

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Abstract:

Although the COVID-19 outbreak has had a disruptive impact on the education industry; the academicians have moulded themselves according to changing situations. They have evolved to an entirely different level during the last two years. This longitudinal study is conducted on faculty members from all over India and aimed to explore some individual and organizational factors affecting the "Hybrid" model of the teaching-learning process, which is the future of the education and training industry [1] [2] creating a Reverse Halo Effect [3]. More than 1000 faculty members from all over India have contacted over WhatsApp and a self-report questionnaire in the form of Google Form measuring various student-related factors, institute-related issues, faculty-related issues, technology-related issues, perceived learning, and perceived employability was circulated. A path analysis showed that the student-related issues, faculty-related issues, institute-related issues, and technology-related issues affect perceived learning which will eventually affect the perceived employability of students. The findings of this study provide a theoretical contribution toward the effectiveness of the hybrid model in the teaching-learning process and its effect on the perceived learning and employability of students.

Keywords: Perceived Employability, teaching-learning process, Hybrid model, Reverse Halo, and perceived Learning

I. INTRODUCTION

The COVID-19 Pandemic has extremely affected our lives personally as well as professionally. Every industry including the education industry is struggling to sustain and get back to the normal mode of working. This Pandemic proved to be a roller coaster, sometimes industries felt as if they are getting up and suddenly, they faced a backslash. According to Narayanan Ramaswamy, National Leader - Education and Skill Development, KPMG India, on average 250 million students suffered due to the closure of schools during COVID-19. The Pandemic has raised many challenges in front of the education sector such as an increase in the number of drop-out students, barriers in learning, technological challenges and problems related to the placements of students [4] According to the report of PRS Legislative Research of Central Government, the unemployment rate in urban areas rose to 20.9% [5] also according to a report of CMIE in the urban areas the rate of unemployment has increased to 9.3% from 8.21% and similarly it has increased in rural areas to 7.28% from 6.44% [6]. There is a need for practical exposure for students but unfortunately, our education system lacks an employment-driven education system [7] .

During a post-pandemic era when there was huge turbulence in the economy unlike

others, the education industry was also trying to cope with the situation and striving very hard to rise from the effects.

Keeping this in mind there is a need to understand the impact of technological factors, individual factors, organizational factors, faculty related factors which affects the overall perceived learning of the students and eventually affects his or her perceived employability. Hence this study attempts to answer the following research questions:

RQ1: What are the factors contributing to the perceived learning of the students?

RQ2: What are the factors contributing to the perceived employability of the students?

II. THEORETICAL FORMULATION OF THE STUDY

An early behaviourist, Edward Thorndike was the one who introduced the term Halo effect and Halo Error in 1920 in his article "A Constant Error in Psychological Ratings" [8]. The Halo Effect is a rational bias that has a positive or negative impact on our perceptions leading us to decide on a selective amount of information. We make our minds about something or someone about a specific thing out of our first experience. In case of this study whatever experience a student might have got during his entire time duration of the course if he or she had scored good marks then he or she may form an opinion about that course that it had given good learning and thus he or she starts assuming that these learnings or experiences will give him or her good employment opportunities. The Halo effect is a normal human tendency to formulate certain expectations about a person or an incidence or event to behave or happen in a particular way. If the earlier experience is positive the subsequent happenings will also be expected to happen positively and if the earlier experience is negative the subsequent happenings will also be expected to happen negatively, this negative expectation can be termed as "Reverse Halo".

The same thing may happen in the case of the hybrid model of the teaching-learning process. The concept of a hybrid model is not new. It was very much in existence but since pandemic the need felt for this model was felt. As per the explanation given by the College of Dupage and Guv Callahan, the hybrid model means using both off-line as well as online methods simultaneously. According to them the outcome and the academic achievements of the hybrid model are stronger as compared to the simple online or offline mode of teaching. This study is about the Halo Effect to be observed in Reverse mode in the context of a hybrid model of teaching-learning. The researcher has developed the hypothetical model as follows which was tested by using AMOS by applying path analysis.

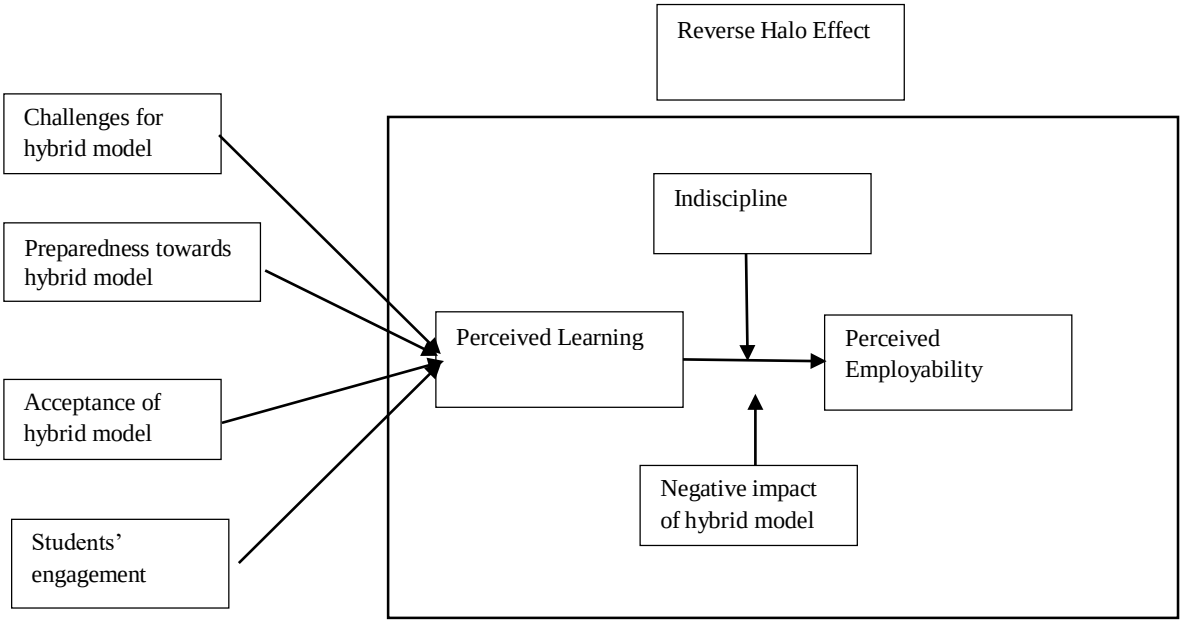

FIGURE 1 MODEL DEVELOPED BY THE AUTHOR

III. REVIEW OF LITERATURE AND HYPOTHESIS FORMULATION

A. Perceived learning:

"The term perceived learning refers to a student's self-report of knowledge gain, generally based on some reflection and introspection." [9]

In this study we have taken the feedback of students of various Under graduates and Post Graduate levels. Since most of the courses are outcome based so we can get the results of the course and program objectives attainment. From the level of attainment, we can understand the level of perceived learning. This new outcome-based courses help us to understand benefit of courses, its activities, assignments, events and the level of learning during the entire course. Even the students also narrated that they have could participate in the classroom activity through the online platform more comfortably through the hybrid platform. So, the first hypothesis is developed as:

- H01: Perceived learning is affected by preparedness towards the hybrid model, acceptance of the hybrid model, and student engagement.

B. Perceived employment:

According to Rothwell, Herbert and Rothwell (2008),

"Given that perceived employability involves students' optimism and self-assurance and views of work-related relevance with regard to supposed abilities". [10]

The term perceived employability can be defined as the individual perception of the students about their possibilities of getting a job and sustaining in the corporate world after getting an education through a hybrid

model. Thus, the following hypothesis is developed:

- H02: Perceived Employability is affected by Perceived Learning.

C. Reverse Halo effect:

According to the explanation given in the article by Kavya Nambiar [11] reverse halo effect is an experience or phenomenon when a perceived positive trait leads to a negative connotation of a person or an event.

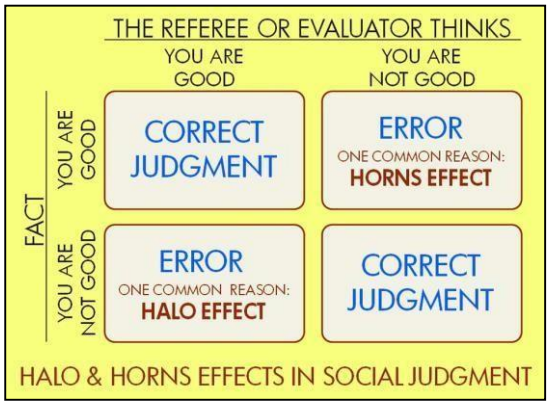

FIGURE 2 HOW THE HALO AND HORN (REVERSE HALO) EFFECTS IMPACT OUR JUDGMENT. [11]

The phenomenon of Halo and Horn refers to making certain errors in decision-making because of certain preconceived notions. The Reverse Halo effect is observed when a perceived positive trait leads to negative feedback or evaluation of that person or activity/ event. [11] Certain preconceived notions drive the Reverse Halo Effect. Stereotype perceptions may create Reverse Halo.

D. Hybrid Model of Teaching-Learning:

According to the explanation given by The University of Edinburgh, we can define the hybrid mode of teaching-learning as a combination of a mixture of the digital and physical modes of classroom activities that students can attend online and offline at the same time or even at different time. [12] [13] Concerning this study, it is a typical stereotype that the hybrid model of learning leads to more involvement of students and results in greater perceived learning which eventually leads to greater perceived employability. So, the following hypothesis is formed:

- H03: Negative perceived learning and indiscipline create Reverse Halo Effect.

IV. RESEARCH METHODOLOGY:

The current study aims to test a conceptual model which impacts perceived learning and perceived employability. Two hypotheses are proposed in the study. Data was collected using a google form comprising 40 items structured questionnaire using a 5-point Likert scale. The data was collected from faculty members from all over India. The respondents were contacted over WhatsApp and a self-report questionnaire in the form of Google Form measuring various student-related factors, institute-related issues, faculty-related issues, technology-related issues, perceived learning, and perceived employability was circulated. Out of the total respondents, 400 have responded. The sampling technique used in this study is snowball sampling, wherein the respondents were asked to circulate the questionnaire amongst their peer group.

V. ANALYSIS AND RESULTS

A. Questionnaire development:

For this study, the author has developed the instrument based on her own experience, available literature, and academic expert feedback. Even though there are multiple other options of data collection available such as personal interview, observation, or case study but keeping the time factor into consideration the google form circulation was decided by the author to collect data. It is one of the fastest models of questionnaire circulation, comparatively fewer efforts are required, data collection is faster, sorting of data becomes very easy and it's flexible as well. The responses were collected on a five-point Likert Scale along with the demographic profile of the respondents.

B. Testing the Questionnaire before the actual Survey:

It is always a best practice to test the questionnaire before the actual survey is conducted so that the probable errors can be reduced to a greater extent. [14] Testing involves administering the questionnaire to a small population in this study it is 30 respondents. After data collection, the reliability and validity are performed to check the strength of the questionnaire [15]

C. Validity testing:

It is a very important criterion of the survey. Research validity relates to the extent to which the instrument is cable of collecting the data accurately. In other words, we can also say that validity testing means how well an instrument measures the things it is intended to measure [16]

D. Content Validity:

It means the degree to which the instrument measures the indicators that exhaustively cover its aspects and dimensions [17] After doing Exploratory factor analysis (EFA) the following constructs were studied in this research:

Challenges for the hybrid model, employment opportunity, preparedness towards the hybrid model, negative impact of a hybrid model, student learnings, acceptance of hybrid model, student engagement, and indiscipline.

E. Face validity:

It is nothing but the verification done to test whether the theoretical framework establishes the link between the constructs. Two academic experts and two industry experts were consulted to get feedback on the questionnaire and the theoretical framework created to develop the questionnaire.

F. Discriminant Validity:

It can be assessed by comparing the degree to which the construct differs from each other. It also measures the degree of differences between the overlapping constructs [18].

G. Convergent validity:

It is performed to measure the level of correlation of multiple indicators of the same construct that are elated to a construct to be studied. To create convergent validity, the following values are to be considered:

factor loading of the indicator, composite reliability, and average variance explained. Its value lies between 0 to 1. Ideally, to get accurate convergent validity the AVE should be greater than 0.50 [18]

H. Composite Reliability:

It is also called Construct Reliability, a measure of internal consistency in scale items, much like Cronbach's alpha [19]

The pilot study was conducted on 50 faculty members and it was found that the questionnaire circulated through google form to be a stable instrument and the data collected was found as normally distributed based on skewness and kurtosis limits.

The composite reliability is found as follows:

- Challenges for hybrid model – 0.68 acceptable
- Employment opportunity – 0.71 acceptable
- Preparedness towards hybrid model – 0.67 acceptable
- The negative impact of the hybrid model – 0.77 acceptable
- Student learning – 0.78 acceptable
- Acceptance of hybrid model – 0.80 acceptable
- Student engagement – 0.80 acceptable
- Indiscipline – 0.77 acceptable

V. HYPOTHESIS TESTING

H01: Perceived learning is affected by preparedness toward the hybrid model, acceptance of the hybrid model, and student engagement.

To test this hypothesis, the author has used multiple regression analysis and the results are as follows:

The first table of interest is the **Model Summary** table. The values of R, R2, and adjusted r2 along with the standard error estimate are as follows:

TABLE: I MODEL SUMMARY

Model	R	R Square	Adjusted R Square	Std. error in the Estimate	Durbin-Watson
1	.891[a]	.794	.792	.42471848	1.986
a. Predictors: (Constant), F7, F3, F6, F1					
b. Dependent Variable: F5					

The "**R**" column represents the value of *R*, the *multiple correlation coefficient*. *R* is considered to be one measure of the quality of the prediction of the dependent variable, F5 (Student Learning) = 0.891 which is an excellent level of a predictor.

R2 value is 0.794 that means it shows the independent variables F7 (Student engagement), F3 (Preparedness towards

hybrid model), F6 (Acceptance of hybrid model), and F1(Challenges for the hybrid model, which explain 79% of the variability of our dependent variable F5(Student Learning).

TABLE: II ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	274.304	4	68.576	380.162	.000[b]
	Residual	71.072	394	.180		
	Total	345.376	398			
a. Dependent Variable: F5						
b. Predictors: (Constant), F7, F3, F6, F1						

The *F*-ratio in the **ANOVA** table tests whether the overall regression model is a good fit for the data or not. From the above table we can say the independent variables statistically significantly predict the dependent variable, $F(4, 394) = 380.162$, $p < .0005$ thus, the regressionmodel is a good fit for the data.

TABLE: III COEFFICIENTS[A]								
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	-3.421	.102		-33.534	.000	-3.622	-3.221
	F1	.588	.015	.881	37.978	.000	.558	.619
	F3	-.105	.043	-.057	-2.441	.015	-.190	-.021
	F6	.059	.043	.032	1.377	.169	-.025	.143
	F7	.028	.043	.015	.647	.518	-.056	.111
a. Dependent Variable: F5								

The general form of the equation to predict the dependent variable of students' perceived learning, F5= -3.421+0.588(F1, Challenges for hybrid model)-0.105(F3, Preparedness towards hybrid model) +0.59(F6, Acceptance of hybrid model) +0.29 (F7, Student engagement)

If we look at the t-test result out of the four factors two factors (F6, Acceptance of hybrid model) and (F7, Studentengagement) are not significant which means they are not having any impact on thestudent's perceived learning.

From this, we can conclude that our hypothesis H01: Perceived learning is affected by preparedness towards the hybrid model, acceptance of hybrid model, and student engagement, is partially accepted.

H02: Perceived Employability is affected by Perceived Learning.

To test this hypothesis, the author has used linear regression analysis and the results are as follows:

The first table of interest is the **Model Summary** table. The values of R, R2, and adjusted r2 along with the standard error estimate are as follows:

TABLE: IV MODEL SUMMARY					
Model	R	R Square	Adjusted R Square	Std. The error of the Estimate	Durbin-Watson
1	.493[a]	.243	.241	.82603081	1.951
a. Predictors: (Constant), F5					
b. Dependent Variable: F2					

The "**R**" column represents the value of *R*, the *multiple correlation coefficient*. *R* is considered to be one measure of the quality of the prediction of the dependent variable, F2 (Employment opportunity) = 0.491 which is a moderate level of the predictor.

R2 value is 0.243 which means it shows the independent variables F5 (perceived learning) explain only 24% of the variability of our dependent variable F2 (Employment opportunity)

TABLE: V ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	87.100	1	87.100	127.652	.000[b]
	Residual	270.884	397	.682		
	Total	357.984	398			
a. Dependent Variable: F2						
b. Predictors: (Constant), F5						

The *F*-ratio in the **ANOVA** table tests whether the overall regression model is a good fit for the data or not. From the above table we can say the independent variables statistically significantly predict the dependent variable, F (1, 397) = 127.6, $p <$ .0005 thus, the regression model is a good fit for the data.

TABLE: VI COEFFICIENTS								
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.001	.041		.022	.982	-.080	.082
	F5	.502	.044	.493	11.298	.000	.415	.590
a. Dependent Variable: F2								

The general form of the equation to predict the dependent variable employment opportunity,

F2=0.001+0.502(Student learning)

If we look at the t-test result it also shows a significant result.

From this, we can conclude that our hypothesis H02: Perceived Employability is affected by Perceived Learning, is accepted.

H03: Negative perceived learning and indiscipline create Reverse Halo Effect.

To prove this hypothesis, the author has created the path analysis. In the first model all the three model fit Indices show good results as follows:

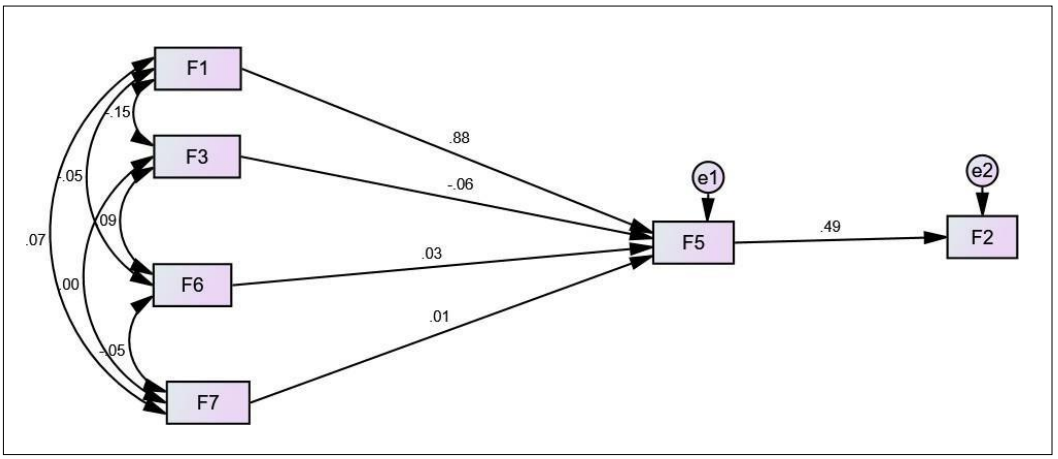

FIGURE 3 PATH ANALYSIS MODEL-1

Absolute Fit Measures		
Test	**Recommended value**	**Reporting value**
X2	p > 0.05	11.6
CMIN / DF	< 3	2.89
RMSEA	< 0.10	0.067
Relative Fit Measures		
Test	**Recommended value**	**Reporting value**
CFI	> 0.95	0.99
NFI	> 0.90	0.985
RFI	> 0.90	0.921
IFI	> 0.90	0.99
Parsimonious Fit Measures		
Test	**Recommended value**	**Reporting value**
PCFI	> 0.50	0.189
PNFI	> 0.50	0.188

TABLE: VII Standardized Regression Weights: (Group number 1 - Default model)						
Hypothesis	Hypothesized relationship			Estimated path coefficient	Significant / Insignificant	Accepted / Rejected
H03 (a)	F5	<---	F3	-0.057	Insignificant	Rejected
H03 (b)	F5	<---	F6	0.032	Insignificant	Rejected
H03 (c)	F5	<---	F7	0.015	Insignificant	Rejected
H03 (d)	F5	<---	F1	0.881	Significant	Accepted
H03 (e)	F2	<---	F5	0.493	Significant	Accepted

From the above table, we can make it out that the factors F3 (Preparedness towards hybrid model), F6(Acceptance of hybrid model), and F7(Student engagement) do not affect to a significant extent student learning but F1 (Challenges for hybrid model) affects to students learning and subsequently affects their employment opportunity.

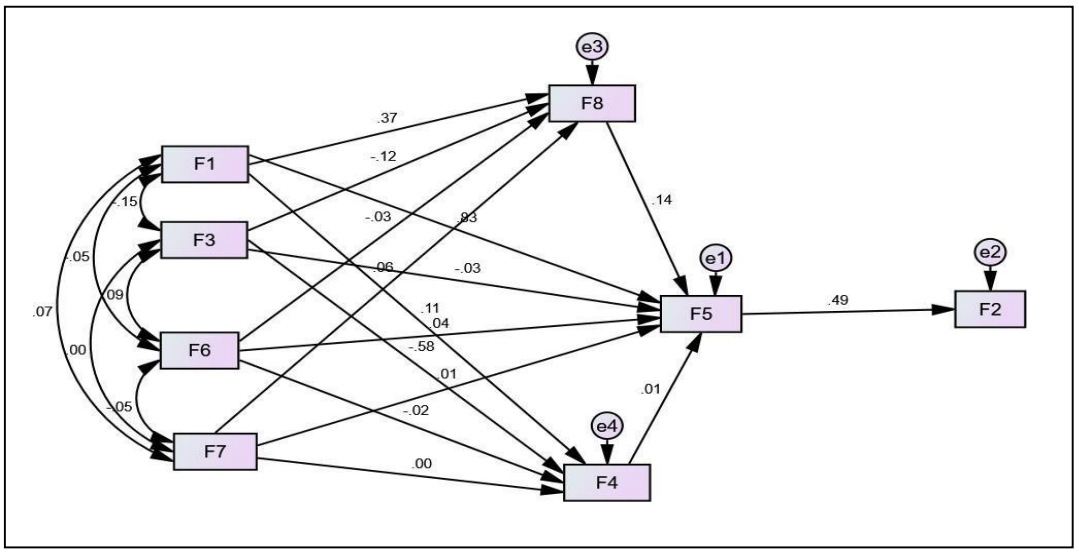

FIGURE 4 PATH ANALYSIS MODEL-2

F1:	Challenges for hybrid model
F2:	Employment opportunity
F3:	Preparedness towards hybrid model
F4:	Negative impact of Hybrid Model
F5:	perceived learning
F6:	Acceptance of hybrid model
F7:	Student engagement
F8:	Indiscipline

Absolute Fit Measures		
Test	**Recommended value**	**Reporting value**
X2	p > 0.05	548.014
CMIN / DF	< 3	78.28
RMSEA	< 0.10	0.426
Relative Fit Measures		
Test	**Recommended value**	**Reporting value**
CFI	> 0.95	0.653
NFI	> 0.90	0.656
RFI	> 0.90	-0.767
IFI	> 0.90	0.659
Parsimonious Fit Measures		
Test	**Recommended value**	**Reporting value**
PCFI	> 0.50	0.127
PNFI	> 0.50	0.128

In the second path analysis where it is shown that the variables F4 (Negative impact of Hybrid Model) and F8 (Indiscipline) affect F5 (Student Learning) and eventually affect employment opportunity since the three models fit Indices do not show good results as shown in the above table. Hence hypothesis **H03: Negatively perceived learning and indiscipline create Reverse Halo Effect,** is accepted.

VI. DISCUSSION:

This study was performed amidst the post-COVID -19 Pandemic wherein most of the institutes or collages were physically opened and the students started coming to the institute physically. But still, in most cases, the institutes or colleges have adopted the hybrid model [1] wherein both online and offline methods of teaching and learning are used. The main aim of this study is to understand whether the hybrid mode is effective or not and whether the hybrid mode is capable to inculcate learning amongst students and can create employment opportunities. The examination of first hypothesis **H01: Perceived learning is affected by preparedness towards the hybrid model, acceptance of hybrid model, and student engagement,** is partially accepted since from the t-test result it is proved that out of the four factors two factors (F6, Acceptance of hybrid model) and (F7, Student engagement) is not significant that means they are not having any impact on the students perceived learning. This means as far as perceived learning [9] is concerned whether the students accept the hybrid model of teaching and learning or not it will happen only when there is sufficient preparedness from institutes as well as from the student's side. When we take into consideration the students' engagement factor again whatever the efforts are put by the faculty members, if the student does not participate wholeheartedly and does not come prepared for the classes then learning will not happen. Hence, the first hypothesis is partially accepted. In the case of second hypothesis H**02: Perceived Employability is affected by Perceived Learning,** is accepted which means that if there is complete participation from the students as well as institute or college side the student will get the feeling that he has learned something, which increases their level of confidence and he also gets the positive results in the form of employment opportunity. Hypothesis three is **H03: Negative perceived learning and indiscipline create Reverse Halo Effect, which** is accepted. It is the general human tendency that when we get a negative results or feedback or experience for the first time every time we expect that we will get the same negative results or feedback every time, which is called Reverse Halo [3] while doing path analysis it was observed that factors like F1(Challenges for hybrid

model), F3 (Preparedness towards hybrid model), F6 (Acceptance of hybrid model) and F7 (Student Engagement) affects students learnings which is supported by the values of Path Analysis but when the effect of factor F8 (Indiscipline) and F4 (Negative Impact of Hybrid model) are studied on F5(Students Learning) it was found that the path analysis was not giving good values. From this, we could conclude that the hypothesis was accepted proving the impact of F8 (Indiscipline) and F4 (Negative Impact of Hybrid model) on employment opportunity.

VII. THEORETICAL IMPLICATIONS

This study contributes to the theoretical as well as practical knowledge wherein the effect of student learning on employment opportunity is studied wherein the effect of the reverse halo effect was observed. The halo effect is observed normally in many situations but the reverse halo effect is not being studied in the majority. This theoretical approach is likely to disrupt the older models of the halo effect wherein only one-sided positive observations are made. The model developed in this study can become an additional contribution to the existing literature related to the teaching and learning process.

VIII. PRACTICAL IMPLICATION

A significant contribution is being made in the field of the reverse halo effect. The study has proved that indiscipline and the negative impact of the hybrid model affects employment opportunity and creates negativity in the mind of students. In the hybrid model of teaching-learning, the students get confused on many aspects like whether to attend online classes or offline classes. If he is attending online classes, then many misconceptions are developed. He may get a feeling that teachers are paying more attention to the off-line students only and off-line may get a feeling that by seating in front of the teacher in a hybrid model he can do mischievous activities since the teacher is not in a position to focus either on online or offline. It happens in the hybrid model that when the teacher pays attention to the online student offline students do not pay attention and when the teacher pays attention to the offline students' online students do not listen. Students have to wait for their chance to interact with the teacher. So, in the hybrid mode, there are many obstacles in the process of teaching and learning. This study has made an effort to identify the most relevant factors which affect the process and an attempt has been made to develop a model which studies the reverse halo effect in the hybrid model of teaching-learning, which can be used for further study.

IX. CONCLUSION

The analysis of the proposed model was performed using path analysis. This model shows that there is a negative impact of

indiscipline and a negative impact of the hybrid model on the students' perceived learning and eventually on employment opportunities. The pandemic has opened many doors for the teaching-learning process as well. It has made remote learning possible. Because of the pandemic when teachers, as well as students, were not able to see each other this online mode has given a new turn to the way of the teaching-learning process. Smartphones became the classroom for teachers and students which connected them in a virtual world. On one side when it was a very rosy picture and seems to be a very great model which the academicians assumed to be the future of India [20] on the other hand it can be a failure whenever indiscipline and negative impact of the hybrid model affects the overall students learning process. In the hybrid model in certain educational institutes, the facilities for the hybrid model of teaching are not available, teachers are not properly training, students do not have proper internet connectivity, and most important they do not want to come out of their comfort zone for attending physical classes and many more. These concerns are really big challenges in front of the academicians. The model developed in this study may serve as an eye opener for academicians who wanted to follow the hybrid model for a long time.

X. LIMITATIONS OF THE STUDY

This study has a couple of limitations. The responses were collected from only 400 academicians and that too for a limited period. The questionnaire was circulated through a google form, no personal interviews were conducted, which could have added various dimensions to the study. The snowball sampling method was adopted to collect the data so the respondents have selected the people of their own choice. There was no control over the selection of respondents. Looking at the restricted time limit the factors included in this study were limited, if more time would have been made available probably mode factors could have been studied. The researcher can take forward this study can be studied it region specific, state specific or can continue as well by including other relevant factors.

XI. CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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