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Developing Successful Commercialisation Model Through Technology Transfer - Assessing its Validity and Reliability by Using Structural Equation Modelling

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ABSTRACT

The aim of this research is to develop and validate a suitable structural model for commercialisation of successful innovations/ideas/methodology from Research & Development organisations (R&D) through technology transfer process. The survey data was extracted from 231 responses out of 310 target participants. A structured questionnaire containing 60 questions designed based on literature survey. The factor structure and preliminary model are evaluated through Exploratory Factor Analysis. The first order and higher order Confirmatory Factor Analysis (CFA) models are evolved by estimating coefficients, covariance matrix, variances and performance indices. Structural Equation Modelling (SEM) is employed to develop and assess validity and reliability of the structural model. The results implied that developed structural model has achieved required level of metrics like Cronbach's alpha above 0.7, composite reliability (CR) greater than 0.7 and Average Variance Extraction (AVE) below 0.5. Hence, the developed model achieved internal reliability & Composite reliability without any convergent validity issue and it can be implemented in R&D organisations and industries for successful commercialisation.

Keywords: Exploratory Factor Analysis (EFA); Confirmatory Factor Analysis (CFA); Structural Equation Modelling (SEM); Technology transfer; Commercialisation

1. INTRODUCTION

Technology commercialisation is a continuous process of transferring technologies from R&D organisations to industries by producing marketable product for increasing benefits to the human kind[1]. The innovations and new technologies of Research organisations need to be commercialised in a systematic manner to achieve customer satisfaction. In 1990, Indian industries worked with build to print concept, but now-a-days industries are transformed to build to specification concept as per Development Cum Production Partners (DCPP). Industries are involved in public funded R&D organisations right from prototype design and development stages.

In general, research organisations depend on development of new technologies and products to meet their own needs rather than commercialisation. The large number of innovations explored by R&D organisations are not considered by Indian industries due to lack of synergy between them[2]. Further, it involves risk and uncertainties in new innovations. Some of the factors affecting technology commercialisation are Government policies, lack of matured technology innovation, inadequate facilities, poor technology transfer procedures and priorities of research organisation[3-4].

In the field of Defence Food Research in India, Transfer of Technology (TOT) is considered as one of the successful model in DRDO for commercialisation of defence products[5]. The science, technology and innovation policy introduced in 2003 by Indian Government was aimed to trigger technology innovators and industrialists in science and technology towards cost effective solution and its commercialisation[6-7].

The economic growth of a nation depends on Research bodies in terms of innovation and knowledge sharing. The success of product commercialisation requires effective business model for R&D organisation to share its qualified outcomes to capable industries. From literature and preliminary discussion with technical experts, the following research gaps with respect to Indian scenario are identified[8].

- **Societal needs less focused**: Many of the technologies are not reaching to the society because Indian R&D organisations and industries develop technologies to meet their own customised needs. Hence, there is an urgent need to transform these technologies into societal applications.
- **Lack of synergy:** In India, there is no specific platform or mechanism to synergize all R&D organisations to share their knowledge and resources towards commercialisation. Hence, it is necessary to develop a business model to achieve synergy for providing better solutions for burning issues related to society.
- **Poor rate of commercialisation***:* The commercialisation of technology transfer process is not matured enough to meet mass scale of production.

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Table 1. List of factors and variables

Factors	Variables
Technology Transferor Factor (TTF)	Q1- Proto type product is field tested successfully Q2- IPR protection Q3- Granted exclusive license Q4- Product service and training at pilot scale Q5- Effective communication\ Q6- Performance guaranty,
Technology Receiver Factor (TRF)	Q7- Having excellent & competent team for business promotion Q8- Prior business experience Q9- Support Q10- Strong financial background Q11- Domain knowledge Q12- Vision for future goals Q13- Good marketing team and marketing capability Q14- Attitude of learning Q15- Necessary infrastructure for future development of the technology Q16- Grace and professionalism Q17- Perseverance of technology Q18- Correct balance of discipline and creativity of technology Q19- Open mind risk taking for new technology Q20- Competent enough to absorb the new technology
Market Factor (MF)	Q21- First product in the local market Q22- Targeted all sections of the people in the society Q23- Large market size Q24- Meeting global needs Q25- No ethical issues Q26- No conflict with local culture and acceptable to the society Q27- Improvement done based on market/user feedback Q28- Competitor for the local goods
Finance Factor (FF)	Q29- Financially viable and profitable Q30- Govt Grants, soft loans and venture capitals funds Q31- Longer repayment periods of debt Q32- Minimum affordable capital Q33- Fixed mutual agreed foreign exchange rates Q34- Correct contractual terms and conditions
Product Factor (PF)	Q35- Reliable & safe to use Q36- Product is miniaturized Q37- Unique in the market Q38- Product can use more than one application Q39- Affordable for all sections of people in society Q40- Ergonomics is good and able to do improvement in future
Government Policy Factor (GPF)	Q41- Pro-active legislative policy Q42- Fiscal incentives/tax benefits Q43- Supporting and strengthening the existing financial schemes
Military Product-Civilian Application Factor (MPCAF)	Q44- Meeting consumer needs Q45- Competitive price & less cost Q46- Easy to maintenance Q47- Acceptable to the society by appearance, portability, scalability & disposability Q48- Easily and indigenously available Q49- New models/new versions and
Success of Technology Transfer (SOTT)	Q50- Product/service emerged from the transferred technology in the market with in short time Q51- Commercial production Q52- Attractive returns/profit Q53- Socio-economic development Q54- Product/service sustained long term in the market Q55- Mass production Q56- Competitive price Q57- High quality and standardized Q58- Large volume Q59- Higher prices for the transferred technology product Q60- Uniqueness and branding in the local and global markets

- **Low focus on up-gradation:** In the global market, technology innovation concepts are changing time to time. Further, influencing factors/variables of the conceptual model are dynamic. Hence, it is essential that R&D organisations to build a suitable mechanism and dedicated team for re-engineering/customizing of the developed products to meet societal needs through upgradation of technologies/products/methodologies as per present requirements.

Most of the business models pertaining to commercialisation are related to developed countries like US and Europe. The influencing variables of commercialisation model for developed countries may not be applicable in Indian scenario due to different environments, highly competitive market, lack of infrastructure and industries. Further, these models are oriented specific to countries and concepts. In Indian scenario, a few technologies transfer models are available, but they are neither tested empirically nor validated statistically.

In developed countries, standard Eco system exists to take care of commercialisation. But India does not have standard Eco system which is essential for country development and economic growth. Many of the well proven technologies are not commercialised due to lack of focussed efforts and matured technology transfer processes.

In view of the identified research gaps, present study focusses on identification of influencing variables and factors to develop a conceptual model which leads to successful commercialisation of Indian R&D products. It includes data collection through survey questionnaires from different demographics and few case studies of technology transfer. This paper explains design and development of successful commercialisation model through technology transfer and its validation using different analytic techniques.

2. METHODOLOGY

The study of influencing factors, variables and their inter-relationship is mandatory to develop successful commercialisation model[9]. The basic conceptual model is derived from survey data and hypothesis. The conceptual model is further tuned using Correlation analysis, EFA, CFA and SEM techniques.

EFA is carried out to evolve factor structure after verifying the presence of inter-relationship among factors[10]. Correlation analysis aids to ascertain inter-linkage among the selected factors[11]. CFA is a logical extent of EFA. CFA works on covariance matrix and errors are accounted in the form of factor loadings[12]. SEM is a well proven method to test and assess the relationship among latent and manifested variables. The reliability and validity of the measurement model can be evaluated by using SEM analysis[13-14]. The fitness of measurement model is ensured through a sequence of steps using SEM[15].

3. DESIGN ASPECTS OF SOTT MODEL

The design of SOTT Model is divided into two major parts:

- Preliminary conceptual model
- Model identification and validation

3.1 Preliminary Conceptual Model

The preliminary conceptual model is derived from the literature survey and knowledge base on technology transfer towards successful commercialisation. It involves two steps:

- Identification of influencing variables and factors.
- Framing of hypothesis.

3.1.1 Identification of Influencing Variables and Factors

A structured questionnaire was designed based on literature survey for data collection. It has 60 questions with objective type answers. Each question contains special meaning, requirement and utility with a five point Linkers Scale which are Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), Strongly Disagree (1). Target participants are R&D institutions heads, scientists, engineers, company CEOs', industry experts, business developers, market strategist and academicians. The questionnaire was forwarded to identified 310 target participants and responses collected from 231 participants. The demographics of target respondents based on designations are 89 Directors, 105 Assistant Directors and 37 Senior Engineers. Similarly, based on experience lesser than 10 years – 103, 10 years – 76, 20 years – 52 and levels of organisation are DRDO – 135, Govt. Institutions – 39 and Industries - 57. The results are generated potentially from the responses of various sources identified by the researcher. Purposive sampling method, was adopted for this purpose. The dominant 8 factors and their associated 60 influencing variables are identified as listed in Table 1.

3.1.2 Framing of Hypothesis

Based on survey data and assumptions, seven hypothesis are formulated as follows:

H1: Data relating to technology characteristic and the technology transferor capabilities that would facilitate successful technology transfer.

H2: Data relating to technology receiver capabilities which lead to successful technology transfer.

H3: Data relating to market factors which can influence successful technology transfer.

H4: Data relating to finance factors that affects successful technology transfer.

H5: Data relating to product factors ultimately process to successful technology transfer.

H6: Data relating to government policies and factors that supports successful technology transfer.

H7: Data relating to measures of evaluating military product for civilian applications which aid successful technology transfer.

A preliminary conceptual model as shown in Fig. 1 with seven exogenous latent factors, one endogenous latent factor

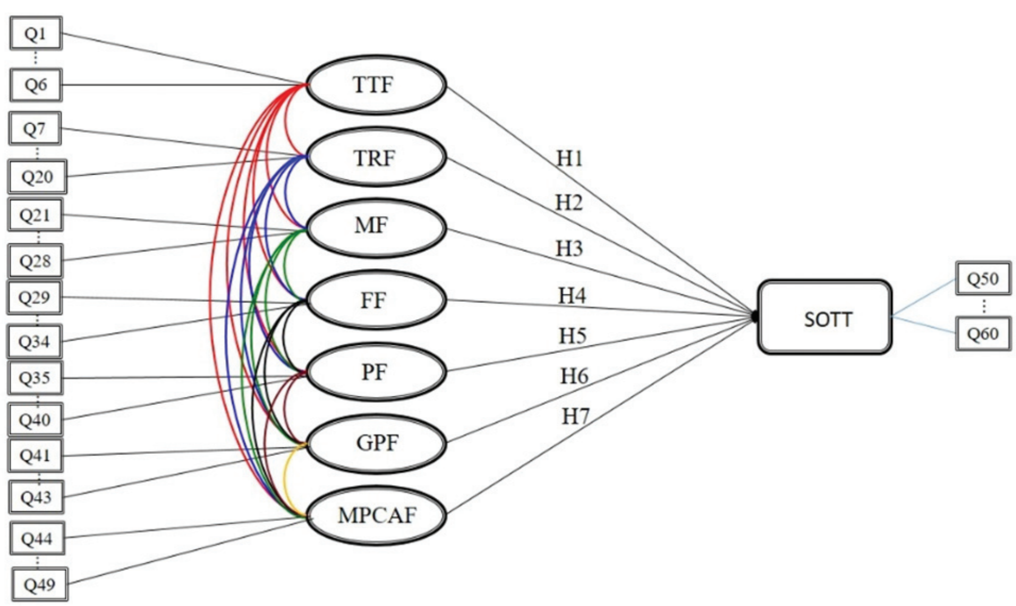

Figure 1. Preliminary conceptual model.

and seven core hypothesis is formulated from the literature data and analysis.

The selected 60 influencing variables are analysed based on answers provided by target respondents by evaluating Mean and standard deviation from scores of each variable. The conceptual model shown in Fig. 1 developed using hypothesis is tested by descriptive oneway Analysis of Variance (ANOVA) with data against demographic variables of respondents with respect to age, designation, educational qualification, organisation and professional experience.

From the analysis of test results, five factors namely, TTF, TRF, MF, GPF, MPCAF scored significant value whereas FF and PF are not statistically significant.

3.2 Model Identification and Validation

EFA explores only factor structure but CFA focuses more on confirming the theory with data. CFA Models are evolved from the analysis of values of covariance and variance. The reliability and validity of developed model are evaluated through estimated Cronbach's Alpha, Composite Reliability (CR) and Average Variance Extraction (AVE) values.

SEM is applied on CFA output to derive inter-relationship between selected factors. The model performance is evaluated based on fitness indices and validated using Chi square, CMIN, good and bad indices.

4. TEST RESULTS AND DISCUSSIONS

4.1 Correlation Analysis

The relationships among factors are identified by using Correlation Analysis. Figure 2 shows the resultant correlation Heatmap.

Based on Pearson's correlation analysis, MF and MPCAF scored high values 0.67 and 0.65 respectively. The scores of TTF, TRF and GPF are 0.51, 0.57 and 0.58 respectively. Further, there is an indication that two factors like FF and PF did not attain significant scores. The correlation result reveals that factors like MF, TTF, MPCAF, GRF and TRF are significant to develop successful commercialisation model through technology transfer process.

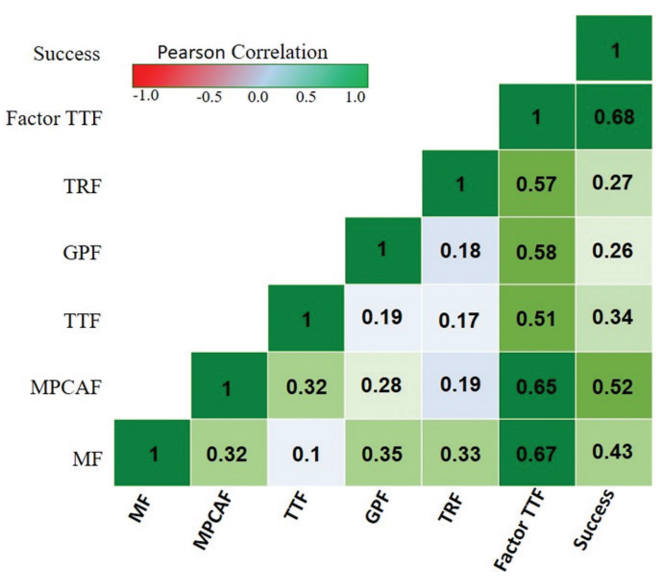

Figure 2. Correlation heat map.

4.2 Exploratory Factor Analysis

Exploratory Factor Analysis (EFA) is aimed to reduce number of variables in the model by eliminating least significant contributions. The presence of correlation matrix among factors are verified before applying EFA. The factors with correlation value more than 0.8 are identified as redundant factors. The criterion for better factor interpretation are factors with Eigen value higher than 1, Kaiser-Meyer-Olkin (KMO) value greater than 0.5, Communalities more than 0.5 and factor loading higher than 0.5. The threshold value of proportion variance of each factor is 0.05. Oblimin is used as rotation method for checking interpretation between factors. The good indices and bad indices should have values more than 0.9 and lesser than 0.05 respectively[10,15].

From the evaluated performance indices pertaining to 60 variables and 8 factors, only five factors namely TTF, TRF, MF, MPCAF & GPF with 19 exogenous variables were meeting the factor interpretation criteria. The key statistics of EFA as shown in Table 2 are evaluated using R software (Version 1.3).

Table 2. Factor analysis key statistics

Key statistics	Obtained value
Kaiser-Meyer-Olkin (KMO)	0.78
Root Means Square Residuals (RMSR)	0.04
Corr RMSR	0.04
Tucker Lewis Index (TLI)	0.976
Fit	0.97
Extraction	ML
Rotation	oblimin
Eigen value	>1
No. Factors	5
Communalities	>.5

Table 3. Factor loadings

Variables	MF	MPCAF	TTF	GPF	TRF
Q22	0.81	-	-	-	-
Q23	0.78	-	-	-	-
Q25	0.54	-	-	-	-
Q21	0.39	-	-	-	-
Q24	0.50	-	-	-	-
Q44	-	0.67	-	-	-
Q45	-	0.68	-	-	-
Q46	-	0.56	-	-	-
Q48	-	0.56	-	-	-
Q47	-	0.39		-	-
Q2	-	-	0.50	-	-
Q4	-	-	0.68	-	-
Q5	-	-	0.58	-	-
Q6	-	-	0.53	-	-
Q3	-	-	0.38	-	-
Q41	-	-	-	0.99	-
Q42	-	-	-	0.37	-
	-	-	-	-	-
Q7	-	-	-	-	0.75
Q13	-	-	-	-	0.53
Eigen value	4.522	2.292	1.59	1.212	1.115
Proportion variance	0.12	0.10	0.08	0.06	0.05
Cum. variance	0.12	0.22	0.29	0.36	0.41

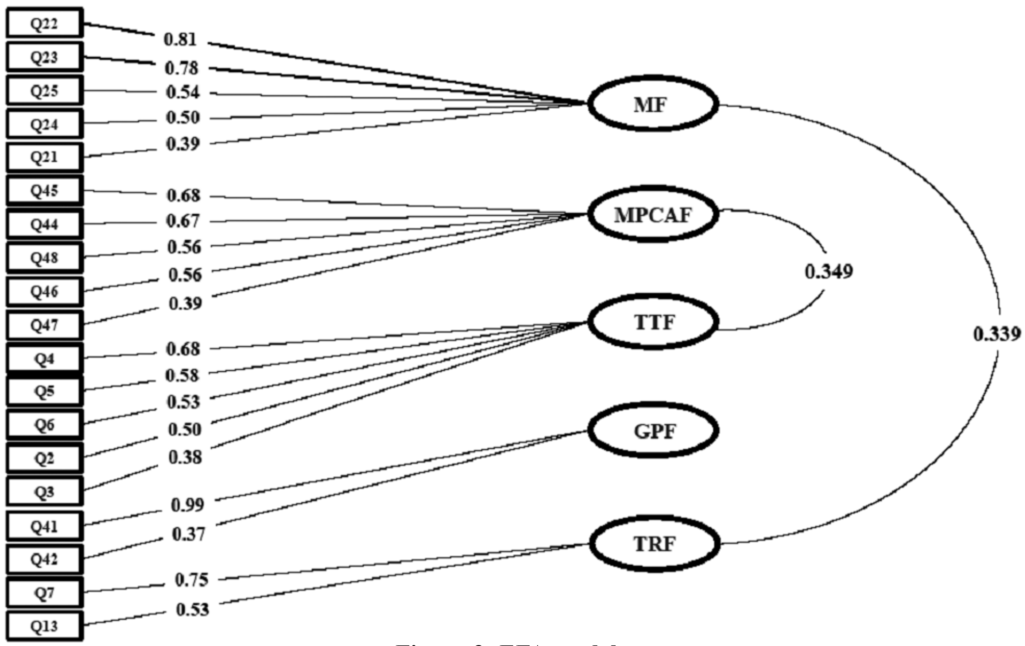

Figure 3. EFA model.

The selected five factors are having Eigen value more than 1. The KMO of 0.78 shows adequacy of sample. The good indices like Fit and TLI scored more than threshold value and the bad indices such as RMSR and Corr RMSR scored below cut off value. The calculated Communalities is above 0.5 shows good factor interpretation.

The Bartlett test of sphericity was also conducted and chi square, df and p value are calculated as 1125, 171 and 0.00 respectively. The factor loadings of the selected 5 factors obtained from EFA are given in Table 3. The proportion variance of each factor is well above threshold value. The cumulative variance extraction is 41%. Hence, five factors mentioned in Table 3 are confirmed for further using CFA. Based on results, EFA model is derived as shown in Fig. 3.

EFA identifies significant factors and explores factor structure. The outcome of EFA showed theoretical model which includes five factors and nineteen variables. The other factors like FF and PF were eliminated from the analysis.

4.3 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) is used to confirm theoretical structure which is derived from outcome of EFA. Initially data is fasted with first-order CFA model and followed by second-order CFA model. CFA works on covariance instead of correlation matrix.

In CFA, values of CR, AVE and Alpha are computed to ensure internal consistency. Maximum Likely hood (ML) is the default method for estimation of CFA model.

According to Hu and Bentler, both good and bad indices are required to assess the fitness of model. Good indices should attain 0.90 and bad indices should be lesser than 0.05. Maximum Likelihood (ML) is based on Chi-Square. CMIN and Chi Square/DF should be lesser than 5. If it is lesser than 2, then the model is excellent[4, 15].

4.3.1 Model Specification

The CFA model contains 5 latent factors with 19 influencing variables like TTF (Q2 to Q5), TRF (Q7 to Q13), MF (Q21 to Q25), GPF (Q41 to 42) and MPCAF (Q45 to Q48). The model is computed based on the exogenous factors latent's relations.

4.3.2 Model Identification

In SEM/ CFA framework, a model should be over identified (S) than the estimate (E). The model with S>E means sample covariance matrix is greater than estimated population of covariance matrix, then model is identified. If S=E model cannot be further proceeded.

The Coefficients like Estimate, Standard Error, Z value, P value, Standard Latent Variables, Standard all and R square are estimated using CFA. From CFA coefficient matrix, in MF Q23 has obtained a higher value 0.81 and Q22 obtained 0.77 whereas, TRF Q13 is 0.75 and other variables scored between 0.47 and 0.69. The P value indicated that all relations are statistically significant at .001 level. As per estimated covariance, the latent relations are well established, which are ranged between 0.19 to 0.46. In MF, TRF attained highest relation 0.48. Variance estimation showed that all selected factors and variables are statistically significant and standardised score is ranged between 0.35 to 0.81. The R square indicating contribution of variables, Q3 attained highest which is 0.81 followed by Q21 and Q2 as 0.78 and 0.71 respectively. The relation between variables of latent and manifested are only indicative. The spherical represents latent using single headed arrow whereas rectangle represents observed items as shown in Fig. 4.

The performance evaluation of CFA first order and higher order model have been carried out and test results are listed in Table 4. The threshold value of each index is tabulated in Table 4[16-17].

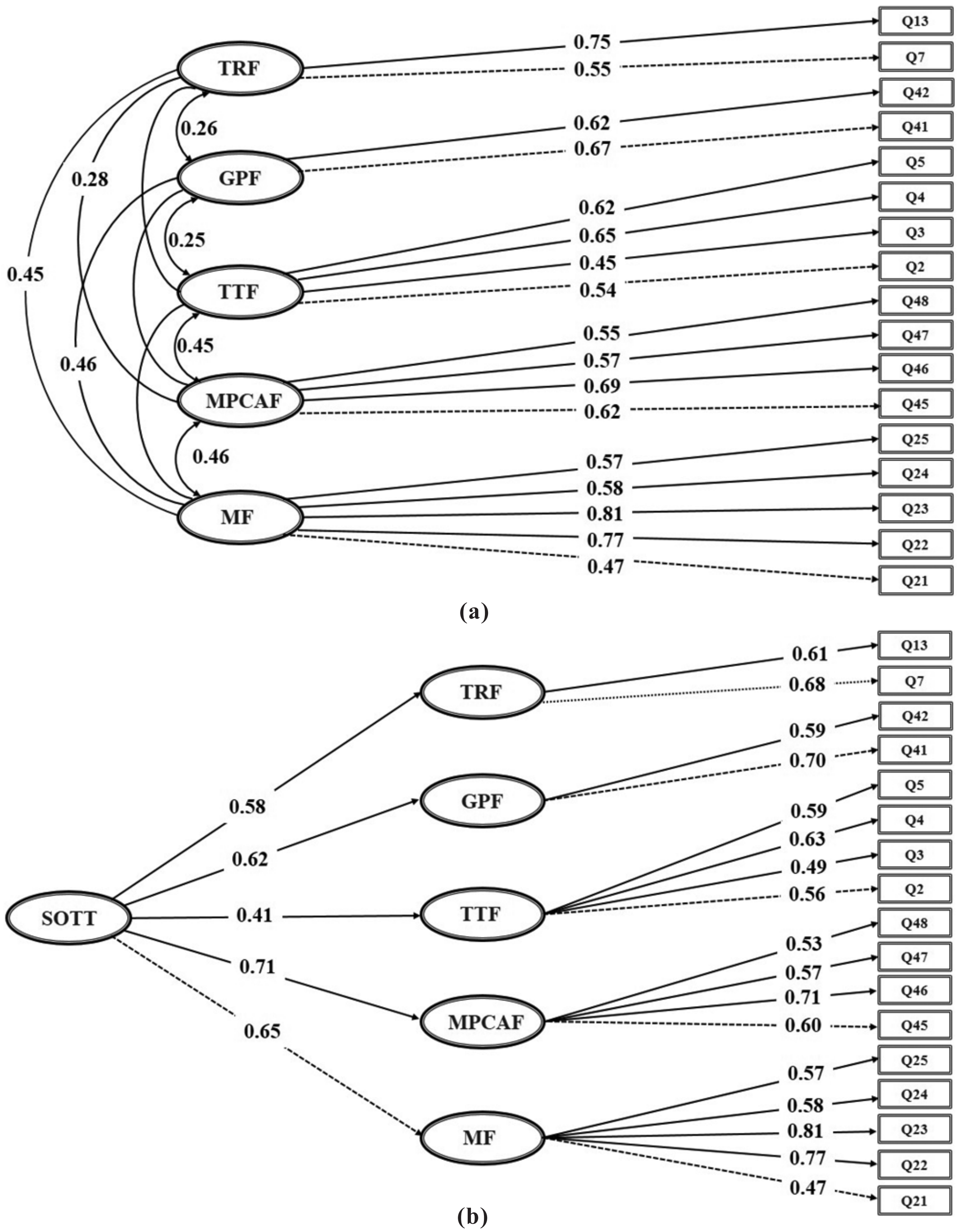

Figure 4. (a) First order model and (b) higher order model.

The first order CFA model shown in Fig. 4 is developed based on estimated values of coefficient, covariance, variance and performance indices. Performance of the model is evaluated based on the values of good indices and bad indices. Good indices such as CFI, NNFI, GFI, and TLI are achieved more than 0.90 which is above threshold value, whereas bad indices such as SRMR and RMSEA should be less than 0.05 which is closely matching. CMIN is close to 1.610. From the CFA results, first order CFA output is validated against theoretical structure. But, first order CFA Model did not show successful commercialisation.

The higher order CFA is carried out to achieve successful commercialisation model. From the calculated coefficients of higher order CFA, Q23 scored highest value 0.85 and Q22 followed by 0.84. On SOTT, MPCAF obtained highest score 0.71, the other variables are having values between 0.41 and 0.62. The relation among latent variables is satisfied as the variance lies between 0.4 and 0.83.

The fitness of higher order CFA is evaluated from the estimated performance indices shown in Table 4. Good indices CFI, NNFI, GFI, and TLI are more than 0.90, bad indices SRMR and RMSEA are less than 0.05 and CMIN is below 3. The achieved values of Alpha, CR and AVE are above threshold values 0.6, 0.6 and 0.5 respectively. Hence, there is no internal consistency issues. AVE value more than 0.6 indicates no convergent validity issues.

The composite reliability of higher order model, which is OmegaL1, OmegaL2, Partial OmegaL1 are 0.603, 0.734 and 0.796 respectively. This is higher than threshold value of 0.6. Hence, model has achieved internal and composite reliability.

Based on results obtained from the measurement model (CFA) were found to be quite acceptable range and therefore CFA measurement model was found to be fit and valid. The higher order CFA model yields SOTT with 29 variables (exogenous 19, endogenous 10).

Table 4. Model performance

Indicies	First order model value	Higher order model value	Threshold value[15-17]
Npar	44.000	39.000	Na
chisq	175.543	193.118	lesser the better
DF	109.000	114.000	Na
pvalue	0.000	0.000	<.05
CFI	0.901	0.901	>.90
NNFI	0.90	0.90	.90
RMSEA	0.055	0.055	<.05
RMSEA.ci.lower	0.041	0.041	<.05
RMSEA.ci.upper	0.068	0.068	<.08
SRMR	0.043	0.045	<.05
GFI	0.906	0.906	>.90
TLI	0.91	0.91	>.90
CMIN	1.610	1.694	<5

Reliability and validity of higher order CFA model

Factors	alpha	CR	AVE
Market	0.775	0.790	0.556
MilPrdt	0.695	0.699	0.526
TOT	0.645	0.647	0.508
Govt	0.604	0.600	0.547
TOR	0.601	0.615	0.578
Total	0.796	0.843	0.532

4.4 Structural Equation Modelling

The purpose of Structural Equation Modelling (SEM) analysis is to establish and validate internal relationship among five factors with SOTT[16]. CFA is a subset of SEM. Hence, all the indices of CFA are applicable to SEM also. The SEM Coefficients shown in Annexure I are estimated using R software 1.3 version.

In MF, coefficients of Q23 and Q22 obtained highest value 0.82 and 0.76 respectively. The variable MPCAF in SOTT achieved highest value 0.81. The value of p confirms significant relation with 0.001 level. As per SEM results, Structural Model has been derived as shown in Fig. 5. The performance indices calculated using SEM technique are listed in Table 5 along with threshold values.

The Good indices like GFI, TLI, CFI and NNFI scored greater than threshold value 0.90. The values of bad indices as SRMR and RMSEA did not cross specified limit of 0.05 and CMIN is 1.704.

Table 5. Model performance

Parameters	Achieved value	Threshold value[16-17]
Npar	62.000	-
Chisq	586.339	lesser the better
DF	344.000	Na
Pvalue	0.000	<.05
CFI	0.904	>.90
NNFI	0.917	>.90
RMSEA	0.055	<.09
RMSEA.ci.lower	0.046	<.05
RMSEA.ci.upper	0.063	<.08
SRMR	0.052	<.08
GFI	0.914	>.90
TLI	0.817	>.90
CMIN	1.704	<5

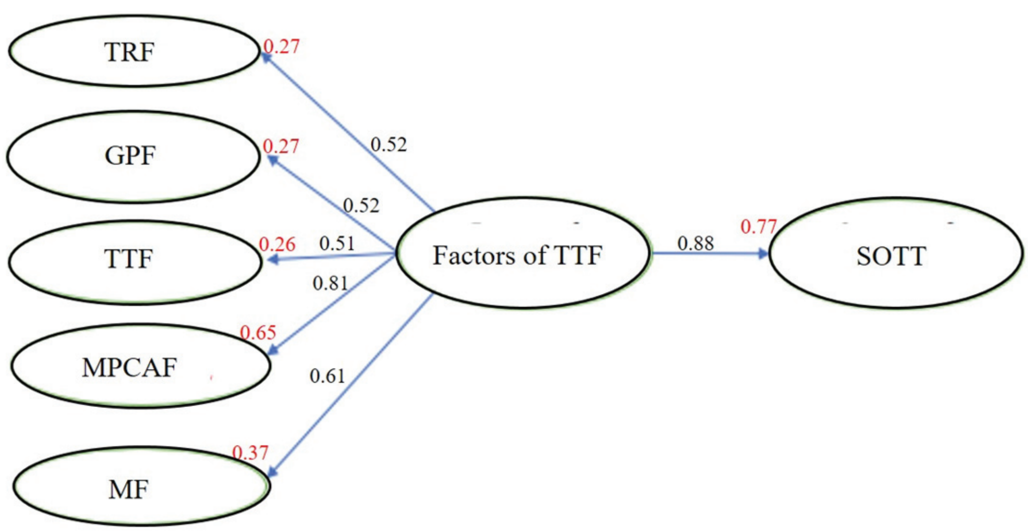

Figure 5. Outcome models of factors of TT and SOTT.

SEM result shows the existence of strong and significant inter-relationship among factors like GPF, MF, TRF, TTF and MPCAF. From the performance analysis, it is clear that model is fit and validated.

5. IMPLICATIONS OF STUDY

Adapting the proposed strategy successfully, it is possible for all the transferred technologies to be scaled-up from R&D stage to application/production stage. The proposed strategy will also be helpful for the R&D managers to bridge the gap between conventional research institutes and hi-tech industries.

5.1 Limitations

The research study was not funded by any public/ private organisations. Hence, by looking into time considerations, broad nature of topic and availability of experienced experts, the sample size was fixed at 231 after thorough analysis. The number of respondents were restricted due to confidential nature of data. The limitations of the present study are given below:

In India, there is no traditional survey research method in the area of technology transfer as it is at the primitive stage. It requires to put a great effort and personal attention to obtain adequate responses from respondents. Empirical research involving laboratory directors, senior scientists, industry CEOs, policy makers and senior R&D managers as respondents were scarce in India.

The data collected in this study is perceptual in nature. In the absence of any objective data to compare with, perceptual data may have limited scope.

The subject chosen for this study is technology transfer for commercialisation which is vast area and the study does not have a narrow focus on any specific sector and requires more exploratory research.

6. CONCLUSIONS

The influencing 60 variables that affect commercialisation of innovation/technology/product from research organisations to industries through technology transfer have been identified from literature survey. A correlation matrix is framed to verify the existence of relation among identified pool of factors. The factor structure and theoretical model have been established by applying EFA. CFA is used to finalise factor structure and establish Measurement Model. As per SEM results, it is evident that developed model is fit and validated in all aspects like construct validity, convergent validity, discriminate validity, internal reliability and composite reliability.

The proposed model has been designed based on the available theories and empirical studies conducted globally. It is further supported based on inputs provided by technocrats, business experts, academicians, industry experts and R&D users. The research paradigm used in this study is a positivistic approach and it relies on quantitative data with large samples, hypothesis framing, structural methodology and data analysis using various statistical methods. However, the developed model can be used by technology transfer managers, R&D scientists & academicians while raising projects for financial assistance.

The scope of work is limited to perceptual data, five factors and 29 variables. The research may be extended by identifying more factors, variables and including objective data. The strong bonding between R&D laboratories and industries may be improved with following measures which lead to successful commercialisation:

- Create platform for inter organisational synergy
- Focussed efforts on social needs
- Improve market strategies
- Identify dedicated team for commercialisation of technologies
- Proactive Govt. policies
- Streamline technology transfer processes.

6.1 Lessons Learned

- Lack of synergy between R&D organisations, academia & industries is observed because all organisations are maintaining their own identity and ideology
- Strong collaboration between R&D organisations & industries is required to tackle societal problems
- Dedicated teams are required to analyse societal requirements and customisation of products
- R&D organisations and product developers should work for common national goals in addition to their own needs.

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In the current work, he has reviewed the design of survey analysis to identify the technology transfer model, specifically for defence applications.

Annexure I

SEM coefficient

Latent variables	Estimate	Std.Err	z-value	P(>|z|)	Std.lv	Std.all	R square
Market =~							
Q21	1.00				0.42	0.48	0.23
Q22	2.02	0.30	6.63	0.00	0.84	0.76	0.58
Q23	2.05	0.30	6.76	0.00	0.85	0.82	0.67
Q24	1.34	0.23	5.91	0.00	0.56	0.59	0.34
Q25	1.44	0.25	5.85	0.00	0.60	0.58	0.33
MilPrdt =~							
Q45	1.00				0.52	0.60	0.36
Q46	1.07	0.15	7.12	0.00	0.55	0.68	0.46
Q47	0.96	0.15	6.52	0.00	0.50	0.58	0.34
Q48	0.86	0.13	6.45	0.00	0.44	0.57	0.33
TOT =~							
Q2	1.00				0.49	0.58	0.34
Q3	0.86	0.16	5.29	0.00	0.43	0.52	0.27
Q4	0.90	0.16	5.67	0.00	0.45	0.60	0.36
Q5	0.84	0.15	5.51	0.00	0.42	0.56	0.32
Govt =~							
Q41	1.00				0.56	0.71	0.50
Q42	0.79	0.20	4.03	0.00	0.44	0.59	0.34
TOR =~							
Q7	1.00				0.55	0.73	0.53
Q13	0.97	0.24	4.03	0.00	0.53	0.57	0.33
Success =~							
Q50	1.00				0.28	0.33	0.11
Q51	1.23	0.31	3.99	0.00	0.35	0.45	0.21
Q52	1.59	0.37	4.25	0.00	0.44	0.54	0.29
Q53	1.50	0.35	4.24	0.00	0.42	0.54	0.29
Q54	1.23	0.32	3.84	0.00	0.35	0.42	0.17
Q55	1.31	0.32	4.15	0.00	0.37	0.50	0.25
Q56	1.59	0.37	4.28	0.00	0.45	0.56	0.31
Q57	1.16	0.31	3.78	0.00	0.32	0.40	0.16
Q58	1.88	0.44	4.27	0.00	0.53	0.55	0.30
Q59	1.79	0.43	4.21	0.00	0.50	0.53	0.28
Q60	1.92	0.44	4.40	0.00	0.54	0.61	0.37
STOT =~							
Market	1.00				0.61	0.61	0.37
MilPrdt	1.65	0.36	4.57	0.00	0.81	0.81	0.65
TOT	1.00	0.27	3.76	0.00	0.51	0.51	0.26
Govt	1.15	0.30	3.84	0.00	0.52	0.52	0.27
TOR	1.12	0.29	3.91	0.00	0.52	0.52	0.27