

THE IMPACT OF AROGYA SETU APP ON COMMON MAN'S HEALTH PROTECTION: USING PLS STRUCTURAL EQUATION MODEL

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ABSTRACT

The Structure path model established through empirical research. The optimism with Arogya setu app(OWA) > Arogya setu app as Assistance (ASAA) > Profession > Common Man's Health Protection Studied and verified. This path have brought in the 31.3% Change in public health protection. the impact is influential since Indian government took lot of initiatives to aware and sensitize the common man to protect against COVID -19 pandemic ill effect. Other initiative were advertisements, announcement in media online and offline, Home check-up, Quarantined move, better hospital and treatment facility and Lock Down measure kept Virus spread under check. Arogya setu app was one of such initiatives. but looking into its impact upon common man's health, the government could improve existing app application and could add up new and advanced features. All features were good to influence but Geo-tagging, awareness for employers & Colleagues and easy self assessment test were majorly influencing and impacting the Public health protection

Key words: Arogya Setu App, Impact, The optimism with Arogya setu app, Profession, App as Assistance, Common Man's Health Protection

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1. INTRODUCTION

The Arogya Setu app have drawn attention of all Indians during COVID-19 Pandemic as a measure to help common man to take due protection for their health. This tool has attracted discussion amongst public regarding its utility to aware and keeping public alert regarding virus spread. The claims and interesting features embedded in this app also drawn attention of academic community and especially researcher. This research is one of the attempt to know and

analyze the public perception and attitude regarding this app. This will strengthen the communication channel between Public and government.

2. REVIEW OF LITERATURE

WHO declared during March, 2020 Corona virus (COVID -19) as new virus pandemic (AteneiParmensis. 2020). it was also mentioned that "It is one of the members of zoonotic coronavirus family that primarily targets the respiratory system" (Academic Press, 2011). Virus transmitted primarily via direct contact or via droplet nuclei of >5 micro meter (Liu etal ,2020; Emerging infectious diseases. 2020) spread by coughing and sneezing by the individual who were infected (Liu etal, 2020; Emerging infectious diseases. 2020), As per study by Li et al. in 425 confirmed cases of corona infection, symptoms of this infection appear after a mean incubation period of approximately 5.2 days [C.I 4.1-7.0] (Holshue ML et al,2020) Patient infected with COVID-19 presented with range of symptoms varying from fever, coughing, fatigue, running nose, headache and later breathlessness and a chest CT scan classical of a pneumonia(Wang et al 2019,Li et al 2020,Calisher C et al 2020)

One of the estimate predicted a monthly transmission to more than 400 subjects by a single infected person. The data of COVID-19 in India pointed an increasing proportion of infection in younger age group- 36% followed by young adults of 40-60 years – 40% (PatiS. 2017). The tough measure taken by India has delayed the virus transmission by announcing lock down, promoting hygiene care like hand and respiratory hygiene methods. It was by ensuring the testing of COVID-19 by RT PCR for all symptomatic cases and those who had contact history of COVID-19 positive and those with history of travel abroad from February (ICMR COVID-19 Testing Strategy,2020)

3. OBJECTIVE OF THE STUDY

- The Major Objective of this research study was to study the impact of Arogyasetu app upon Common man's Health Protection
- The second objective of the study was to know the Mediation effect of Profession upon Factors and the Common man's Health Protection
- The other Objective of the study was to know the Moderation effect of app's use as an e-pass impacting the Common man's Health Protection

4. RESEARCH METHODOLOGY

The study was descriptive and exploratory in nature, The Sample size of the study was 258. The structured questionnaire was used to take the responses from common man who used arogya setu app during Covid -19 pandemic. Questionnaire was collected from goggle form and in person also. The profession was one of the demographic variable used in the study. The Non probabilistic convenience sampling used. The spss16 software used to apply principal component analysis for factor identification. The PLS SEM applied to study the Structure Equation path and Model.

Hypotheses formulated

H_{1(o)}:- The Profession was mediating the impact of optimism with app(OWA) and Arogya setu app as a assistance(ASAA) upon Public health protection

H_{1(a)}:- The Profession was not mediating the impact of optimism with app(OWA) and Arogya setu app as a assistance(ASAA) upon Public health protection

H_{2(o)}: The Use of app as e-pass was moderating the impact upon Public health protection

H_{2(a)}: The Use of app as e-pass was not moderating the impact upon Public health protection

5. RESULTS AND DISCUSSION

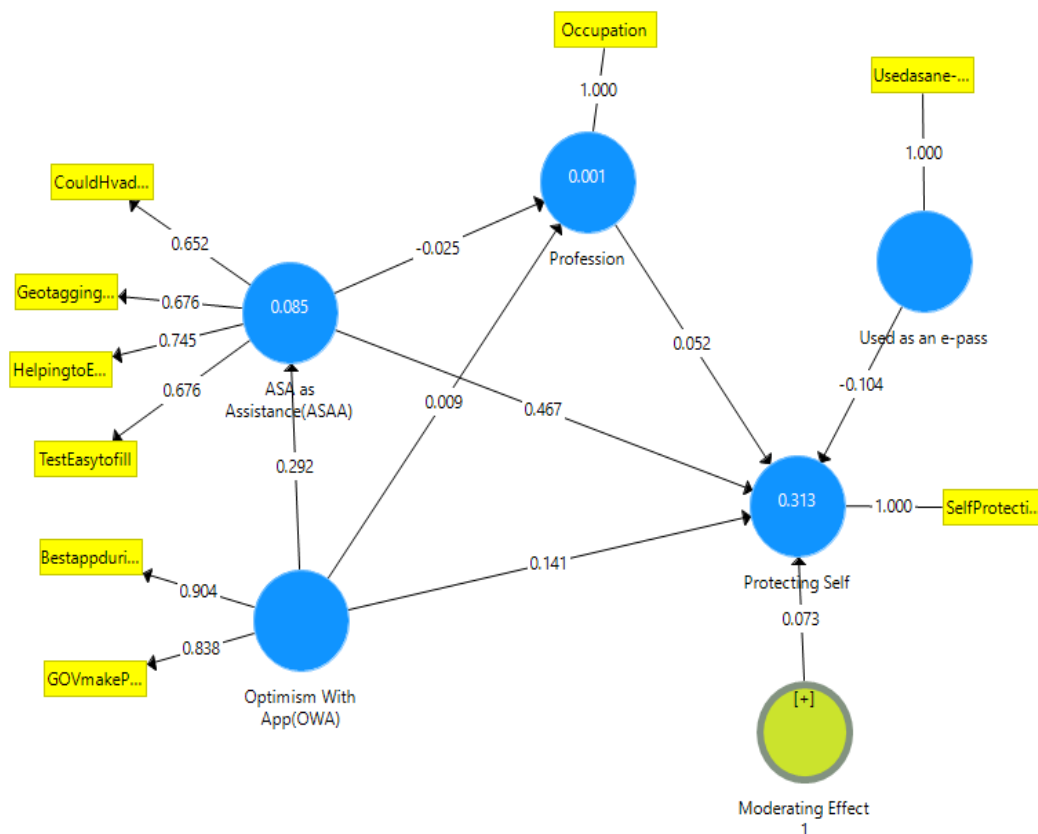


Figure 1

Mediation Analysis : Mediation Analysis Performed to assess the Mediating role of Profession From OWA -> ASAA-> Protecting Self ,For this path Profession Revealed significant Mediating role($\beta = 0.136, t=3.181, p=0.002 < 0.005$). For path ASAA->Protecting self, Profession played a significant mediating role as($\beta = 0.467, t=7.413, p=0.000 < 0.005$); likewise for path OWA->Protecting Self ,Profession played indirect Significant Mediating role($\beta = 0.136, t=3.146, p=0.002 < 0.005$).

The H_{1(o)}- Not rejected and significant mediation effect established. So we can conclude that The Profession mediated the impact of optimism with app(OWA) and Arogya setu app as a assistance(ASAA) upon Public health protection.

Moderating Effect: The app used as an e-pass was found having no significant Moderating effect upon Public Health protection($\beta = 0.073, t=1.582, p=0.114 > 0.005$)

Therefore H_{2(a)} was not rejected that The Use of app as an e-pass was not moderating the impact upon Public health protection.

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Table 1

Total Effect	β Total Effect	T	Sig.
ASA as Assistance(ASAA) -> Profession	-0.025	0.351	0.726
ASA as Assistance(ASAA) -> Protecting Self	0.467	7.413	0.000
Moderating Effect 1 -> Protecting Self	0.073	1.582	0.114
Optimism With App(OWA) -> ASA as Assistance(ASAA)	0.292	3.891	0.000
Optimism With App(OWA) -> Profession	0.009	0.132	0.895
Optimism With App(OWA) -> Protecting Self	0.141	2.105	0.036
Profession -> Protecting Self	0.052	1.025	0.306
Used as an e-pass -> Protecting Self	-0.104	2.333	0.020

Table 2

Specific Indirect Effect	β Specific Indirect Effect	T	Sig.
Optimism With App(OWA) -> ASA as Assistance(ASAA) -> Profession -> Protecting Self	0.000	0.231	0.817
Optimism With App(OWA) -> ASA as Assistance(ASAA) -> Profession	-0.007	0.341	0.733
ASA as Assistance(ASAA) -> Profession -> Protecting Self	-0.001	0.245	0.806
Optimism With App(OWA) -> Profession -> Protecting Self	0.000	0.095	0.924
Optimism With App(OWA) -> ASA as Assistance(ASAA) -> Protecting Self	0.136	3.181	0.002

Table 3

Total Indirect Effects	β Total Indirect Effect	T	Sig.
ASA as Assistance(ASAA) -> Profession			
ASA as Assistance(ASAA) -> Protecting Self	-0.001	0.245	0.806
Optimism With App(OWA) -> Profession	-0.007	0.341	0.733
Optimism With App(OWA) -> Protecting Self	0.136	3.146	0.002

Optimism With App(OWA) -> ASA as Assistance(ASAA)($\beta=0.292, t=3.891, p=0.000 < 0.005$), ASA as Assistance(ASAA) -> Protecting Self($\beta=0.467, t=7.413, p=0.000 < 0.005$) and Optimism With App(OWA) -> Protecting Self($\beta=0.141, t=2.105, p=0.036 < 0.005$) found significant.

Table 4

Path Coefficient	β	T	Sig
ASA as Assistance(ASAA) -> Profession	-0.025	0.351	0.726
ASA as Assistance(ASAA) -> Protecting Self	0.467	7.413	0.000
Moderating Effect 1 -> Protecting Self	0.073	1.582	0.114
Optimism With App(OWA) -> ASA as Assistance(ASAA)	0.292	3.891	0.000
Optimism With App(OWA) -> Profession	0.009	0.132	0.895
Optimism With App(OWA) -> Protecting Self	0.141	2.105	0.036
Profession -> Protecting Self	0.052	1.025	0.306
Used as an e-pass -> Protecting Self	-0.104	2.333	0.020

The Q² Value above zero shows that model has Predictive relevance.

Table 5

Construct Crossvalidated Communalities	Q ² (=1-SSE/SSO)
ASA as Assistance(ASAA)	0.135
Moderating Effect 1	1
Optimism With App(OWA)	0.275
Profession	1
Protecting Self	1
Used as an e-pass	1

The SRMR (Standardized Root Mean Square Residual) was found 0.084, this value was equal to 0.08 (Hu& Bentler, 1999) and 0.10 acceptable range. So Model had good fit (mediocre fit).

Model Fit	Saturated Model	Estimated Model
SRMR	0.084	0.089

Model Fit	
rms Theta	0.215

Rms Theta value was close to 1 so model was good fit. The value of R square for Protecting self as dependent variable was 0.313 that was equal and over 0.1 (Falk & Miller 1992)

Table 6

	R Square	R Square Adjusted
ASA as Assistance(ASAA)	0.085	0.082
Profession	0.001	-0.007
Protecting Self	0.313	0.299

The construct Composite Reliability was Found greater than 0.70 and AVE was close to 0.5 and above 0.40 acceptable. So construct was found Reliable and valid.

Table 7

Construct Reliability and Validity	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
ASA as Assistance(ASAA)	0.633	0.641	0.782	0.473
Moderating Effect 1	1	1	1	1
Optimism With App(OWA)	0.689	0.717	0.864	0.76
Profession	1	1	1	1
Protecting Self	1	1	1	1
Used as an e-pass	1	1	1	1

The data set was discriminant as Fornell- Larcker Criteria satisfied by looking at diagonal value higher than corresponding values.

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Table 8

Discriminant Validity(Fornell-Larcker Criteria)	ASA as Assistance(ASAA)	Moderating Effect 1	Optimism With App(OWA)	Profession	Protecting Self	Used as an e-pass
ASA as Assistance(ASAA)	0.688					
Moderating Effect 1	0.042	1				
Optimism With App(OWA)	0.292	0.012	0.872			
Profession	-0.022	0.035	0.002	1		
Protecting Self	0.521	0.084	0.296	0.063	1	
Used as an e-pass	-0.108	0.091	-0.172	-0.179	-0.181	1

For HTMT ratio The value was well placed in criteria and below 0.90 so Discriminant validity established between two reflective constructs.

Table 9

Discriminant Validity (HeteroTrait-Monotrait Ratio)	ASA as Assistance(ASAA)	Moderating Effect 1	Optimism With App(OWA)	Profession	Protecting Self
ASA as Assistance(ASAA)					
Moderating Effect 1	0.118				
Optimism With App(OWA)	0.441	0.033			
Profession	0.082	0.035	0.101		
Protecting Self	0.64	0.084	0.35	0.063	
Used as an e-pass	0.148	0.091	0.198	0.179	0.181

Table 10

Significant Positive Correlation	Bestapp durig time	CouldHvaddedCovi dandDietdata	GOVmakePer manentapp	Geotagging Reliab le	HelpingtoEmploy erColleague	Occup ation	SelfProtect ionHelp	TestEas ytofill	Usedasa ne-pass
Bestappduringtime			0.525	0.273			0.302		- 0.198
CouldHvaddedCovid andDietdata			0.243	0.225	0.314		0.298	0.319	0.018
GOVmakePermanen tapp	0.525	0.243					0.205		- 0.089
Geotagging Reliable	0.273	0.225			0.296		0.326	0.365	- 0.125
HelpingtoEmployer Colleague		0.314		0.296			0.465	0.287	- 0.095
Occupation							0.063		- 0.179
SelfProtectionHelp	0.302	0.298	0.205	0.326	0.465		1	0.316	- 0.181
TestEasytofill		0.319		0.365	0.287		0.316		- 0.086
Usedasane-pass							-0.181		1

The Best app during that time and If Govt Make Permanent app for pandemic like situation has got Moderate positive Correlation. It means that if public app existed already then it could have been the best. The Features Could Have added about Covid-19 & Diet data along with Helpfulness of app to Employer Colleague Indicators have found positive considerable correlation. It means if Feature improvement and additional data regarding diet and other prescription were added then these would have improved the utility of this app for employees. It means there is a scope of improvement in this app. The Features Could Have added about Covid and Diet data and Self assessment test are correlated positively and considerably. It means ease of self assessment can be increased if additional useful information provided on a app. Geo-tagging Reliable and ease of self assessment test are positively related and it's a considerable relation. Because they can't be that much effective in isolation.

6. CONCLUSION

The Structure path model established through empirical research. The optimism with Arogya setu app(OWA)> Arogya setu app as Assistance (ASAA)> Profession> Common Man's Health Protection Studied and verified. This path have brought in the 31.3% Change in public health protection. the impact is influential since Indian government took lot of initiatives to aware and sensitize the common man to protect against COVID -19 pandemic ill effect. Other initiative were advertisements, announcement in media online and offline, Home check-up, Quarantined move, better hospital and treatment facility and Lock Down measure kept Virus spread under check. Arogya setu app was one of such initiatives. but looking into its impact upon common man's health, the government could improve existing app application and could add up new and advanced features. All features were good to influence but Geo-tagging, awareness for employers & Colleagues and easy self assessment test were majorly influencing and impacting the Public health protection. The positivism and need for permanent app variable also impacted in combination with all above features. The interesting thing was the role of profession to mediate their relationship found, especially salaried class and students were making bigger effect in arogyasetu app impact upon public health protection. The correlation of Ease of testing and geotagging with need of app improvements have given direction to the Govt to further improve the existing app for larger and better impact.

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