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Intentions Of People In Compliance With Social Distancing Norms Of Covid-19 Pandemic

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Abstract
Amidst the global COVID-19 pandemic caused by SARS-CoV-2, social distancing emerges as a crucial strategy for reducing risks. This study delves into how communities are embracing social distancing norms, shedding light on people's intentions during this critical time. Data is collected from 214 adult customers using a standardized instrument and evaluated via Structural Equation Modelling. The findings reveal that attitude, subjective norms, and perceived behavioural control significantly and positively influence public intentions towards adherence to social distancing norms. Implications for health sector and policymakers have been rendered at the end of this study.

Keywords: Attitude, Subjective Norms, Perceived Behavioural Control, Covid-19, Social Distancing Norms, Intentions.

Introduction

In late December 2019, the COVID-19 outbreak emerged in Wuhan, China, triggering a worldwide public health crisis (Zhao, 2020). This infectious disease, while not unprecedented, has ignited grave concern among researchers, doctors, policymakers, and the medical community (Wang et al., 2020; Zhu et al., 2020). Within months, the WHO declared a pandemic on March 12, 2020, due to its devastating effects (Miller et al., 2020). The highly contagious nature of COVID-19 swiftly spread to over 213 countries, with grim statistics: 20,544,320 confirmed cases and 774,664 deaths (Worldometers, 2020). Beyond the loss of life, the virus triggers psychological, economic, security, and social challenges, creating a multidimensional crisis. As of now, no vaccine exists, leaving people vulnerable to long-term health complications and mortality (Duan & Zhu, 2020; Xiao & Torok, 2020).

This pandemic poses not only a threat to global health but also to economies and mental well-being (Roy et al., 2020; Xiao & Torok, 2020; Zhu et al., 2020). The rising tide of cases and deaths continues to surge worldwide. Developing nations like India and Bangladesh, lacking sufficient medical resources, face particular vulnerabilities (Sakamoto et al., 2020).

Even advanced countries like the USA, the UK, and others struggled to provide adequate healthcare infrastructure, resulting in escalating cases and fatalities (Worldometers, 2020). This contagion's spread stems from human mobility and interaction, with air travel, public transport, and gatherings facilitating transmission (McCloskey et al., 2020). Urgent measures like workplace closures, event cancellations, and isolation are critical to curbing this epidemic (Allcott et al., 2020). Maintaining a 1-meter distance from crowds globally has become a proactive safety practice, endorsed by WHO and experts (Abel & McQueen, 2020; Sandeep et al., 2020).

Social distancing now termed as physical distancing is a vital tool for protecting local and global populations (McCloskey et al., 2020; Sandeep et al., 2020). This cultural shift has become a norm, especially in South Asia. In Bangladesh, attempts to enforce distancing met resistance due to societal traditions (Xiao & Torok, 2020).

Amidst this backdrop, the Theory of Planned Behaviour (TPB) is applied to understand India's collective society and its struggle with maintaining social distance (Ajzen, 2014; Taufique & Vaithianathan, 2018). TPB's theoretical framework informs interventions that can effectively navigate this crisis (Ramkissoon, 2020).

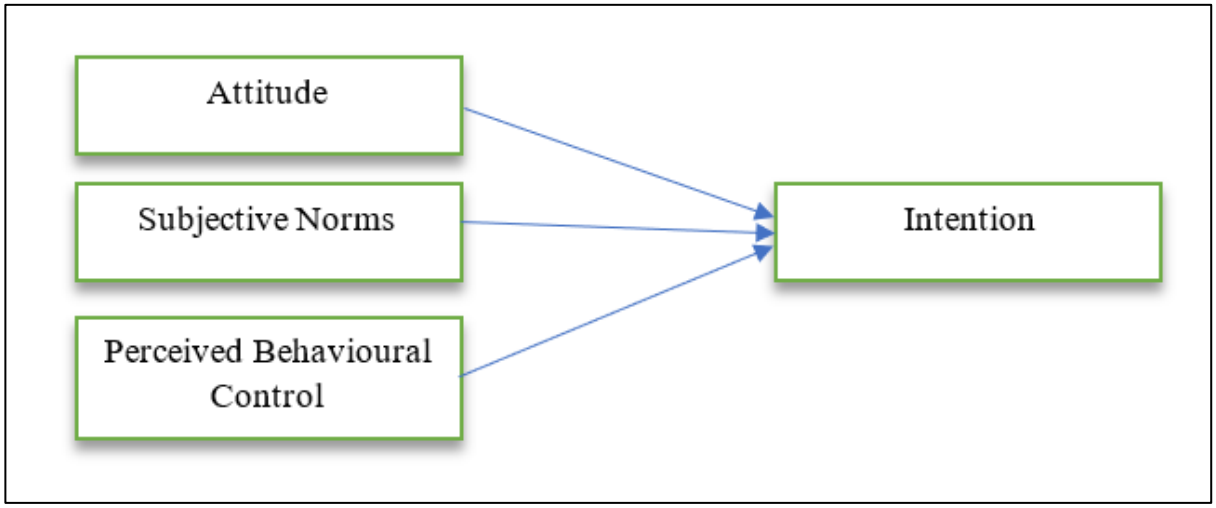
The study offers novel insights in five key areas. It uniquely employs TPB to unravel social distancing within the COVID-19 crisis, revealing predictors of behaviour in India. Additionally, it contributes to bridging the gap between intention and action in safeguarding lives. Policy implications emerging from this research could save countless lives in Asia and beyond. This study's findings suggest potential research directions for comprehending social distancing's complexities in developing countries.

Literature Review

Theoretical Framework - Theory of Planned Behaviour

This study explored to endeavour how well the Theory of Planned Behaviour predicted the intentions of people adhering to social distancing norms during the current wave of the Covid-19 pandemic. Because social distancing comprises a wide variety of behaviours meant to reduce the spread of Covid-19, the current study investigated people's perceptions of several social distancing norms such as 'maintaining two meters distance from others', 'wearing face masks', and 'keeping hand hygiene'. It was expected that subjective norms, attitudes, and perceived behavioural control would lead to people's intentions to withdraw from social interactions. As a result, the current study has adopted the same notions as the antecedents of people's intent to follow social distancing tactics during the current wave of the Covid-19 pandemic.

Figure 1. Theoretical Framework



Attitude

Attitude is the extent from which the individual seems to have a positive or critical perception about a specific action. Attitudes are established mostly by the traits by which individuals associate a conduct and assess it favorably or unfavorably (Das et al., 2021). The stronger an individual's level of positive willingness (attitude) toward his or her behaviors, the more likely the intention of a specific conduct (Verma & Chandra, 2018). Social and health psychology research support the idea that attitudes regarding recommendations impact implementation (Fennis et al., 2011). The terminology of attitudes has been widely utilized to anticipate numerous health-related actions (Doganis et al., 1995). Individuals with larger protective interests may be more inclined to be proactive in their social distancing behavior in the setting of the Covid-19 circumstances as addressed by the studies such as texting and driving habit (James et al., 2018), environmental safeguards attitude (Wang et al., 2018). As a result of Covid-19 consequence, conscious persons are more likely to embrace social distancing behavior. Some research has also indicated the role of attitudes about the intentions towards certain social, physiological, and ecological practices (Kirk & Haegele, 2019). A modest shift in peoples' thoughts and attitudes might persuade them to increase social distances during the critical period of the pandemic (Chen et al., 2020). According to the most recent assessments on attitudes regarding Covid-19 recommendations, there is a solid consensus and dedication to the health guidelines of people (Selby et al., 2020). Furthermore, as a non-pharmaceutical technique, social distance can help to slow the transference of Covid-19 and pave the path to containing the pandemic's fast expansion (Yanti et al., 2020). Thus, this resulted in the following proposed assumption:

H1: Attitude has a significant impact on intentions of adopting the methods of social distancing.

Subjective Norms

The subjective norm is generated by normative conviction in relation to the expectancy of human behaviours and pertains to one’s appraisal of other individual's wishes or

behaviour patterns (Taufique & Vaithianathan, 2018). Subjective norms exhibit a beneficial influence on a person's desire of complying with Theory of Planned Behaviour through many forms, differing from cognitive to physiological action (McBride et al., 2020). The influence of peer strain or subjective norms on human activities is peculiar to communities, where people in a collective society are more likely to induce others (Taufique & Vaithianathan, 2018). In addition to an individual's beliefs toward specific behaviours, the role of social code in an individual's social environment is an important component in psychological changes in health behaviours, as norms are influential shapers of behaviour, and people are inspired by norms in one's perception and responses to events, notably during ambiguity (Cialdini & Goldstein, 2004). There is a difference between descriptive norms and injunctive norms: Injunctive norms are the ones disapproved by somebody else, i.e., how people feel you must do, whereas descriptive norms pertain to what people normally do, i.e., what people do (Deutsch & Gerard, 1955). Descriptive norms have shown to be particularly useful to health-related behaviours and have the strongest influence on behaviours when they originate from persons with whom a person has a close relationship, like relatives and friends (Abrams et al., 1990; Bavel et al., 2020; Rivis & Sheeran, 2003). Subjective norms and moral standards are strong indicators of social distancing behaviour in predicting people's intentions during the Covid-19 outbreak (Hagger et al., 2020). Therefore, the subjective protocol to social isolation represents the person's overall perception of how people embrace, support, and implement social distancing in this situation of the Covid-19 pandemic (Das et al., 2021). Thus, this resulted in the following proposed assumption:
H2: Subjective Behavioural Norms have a significant impact on Intentions of adopting the methods of social distancing.

Perceived Behavioral Control

Perceived behavioural control is a distinct component of the Theory of Planned Behaviour, generated by control perceptions about the situations that might either encourage or inhibit the behaviour and reveals how confident a person feels in his or her attempts to address an issue (Ajzen, 2014). In this context, self-efficacy refers to the belief that individuals are capable of accomplishing their objectives via their efforts. (Ajzen, 2014). Perceived behavioural control was shown to have a dual function in Theory of Planned Behaviour research (Ajzen, 1991b). Aside from its role in intention, it has also been shown in various human behavioural investigations to have the ability to influence actual behaviour (Dewberry & Jackson, 2018). Within the context of Covid-19 pandemic, perceived behavioural control to community distancing may be stated as a person's ability distinguished by self-control, resulting in a change for combating Covid-19 pandemic (Das et al., 2021). Individuals who feel they have the required means, skills, and chances to maintain social detachment are more likely to aim and carry out social distancing (Das et al., 2021). Among the three variables of Theory of Planned Behaviour, social norms followed by perceived behaviour control influence more of the intentions, as effective risk communication can modify people's perceptions of risk, attitudes, and subjective norms, in turn changing their intentions to social distance (Adiyoso & Wilopo,

2021). Therefore, perceived behavioural control is the most substantial element, accompanied by subjective rules governing both desire and practical social isolation behaviour (Das et al., 2021). Moreover, empirical research has shown that an individual's level of behavioural control has a significant impact on that individual's conduct (Taufique & Vaithianathan, 2018). Thus, this resulted in the following proposed assumption:

H3: Perceived Behavioural Control has a significant impact on Intentions of adopting the methods of social distancing.

Intentions towards Social Distancing

People's behavioural intention is defined by the Theory of Planned Behaviour as a person's decision that they will engage in a given behaviour, generally based on their attitudes and social norms as well as their self-control over that specific conduct (Ajzen, 1991). It is believed that more of a person's intentions could lead to more behavioural interventions (Diepold et al., 2017; Taufique & Vaithianathan, 2018). Amid the Covid-19 crisis, people's willingness to maintain social distance morphed into the intention to practice social distance in order to rid themselves of the virus, and the most important factor in actual behaviour is an individual's intention for achieving his or her goals (Das et al., 2021). It is believed that the purpose of the individual to promote social isolation is a subject matter of current social alienation practice (Yadav & Pathak, 2017). Moreover, Individual attitudes, norms, and perceived behaviour control may be used to successfully encourage protective behaviours focused on reducing the spread of Coronavirus and other epidemics (Gibson et al., 2021). Individuals who are responsible are thought to be more likely to take action for social separation during pandemics to preserve themselves and others in the community (Diepold et al., 2017). Social distancing intention is determined by subjective norms, moral obligation, and perceived behavioural control, whereas conduct is determined by routine and intention (Christensen et al., 2020). Therefore, healthcare awareness programmes should focus on increasing adherence to social distancing intentions, particularly among high-risk populations; otherwise, attempts to reduce risk perceptions alone may be insufficient (Masters et al., 2020).

Materials and Methods

The present study endeavoured to examine the intentions of the general public to adhere to norms of social distancing as a defence against the COVID-19 virus. The theory of planned behaviour (Ajzen, 1991) was used as a theoretical foundation for establishing and analysing the association between exogenous and endogenous variables. The study was undertaken in the union territory of Jammu and Kashmir (J&K), India. Data for the study were collected between the months of September 2020 to November 2020. The sample for the study was taken from the general population of J&K with the help of the convenience sampling method. Due to the rapid spread of the omicron virus, data from respondents was collected electronically through google forms.

Sample

Hoelter (1983) argued that a sample size of 200 is adequate for testing hypotheses using Structural Equation Modelling (SEM). However, a sample size of 214 responses is considered for the current study which is higher than the established threshold limit. Researchers decipher that large sample size increase accuracy of research results (Delİce, 2010). The sample size adequacy was also tested with G*power. To achieve the statistical power of 80% with an effect size of 15%, G*Power suggests at least 77 responses are required. However, Hair et al., (2011) suggest that a sample size equal to three times G*power is appropriate for conducting various statistical analyses. All responses were complete and valid because all the questions on the google form were marked mandatory.

Instrument

A self-administered questionnaire was used to collect the primary data from respondents. The first section of the questionnaire collected demographic information such as gender, age, health condition, education and monthly income. This is followed by the next section analysing the study's exogenous variables (i.e., attitude, subjective norms and perceived behavioural control) and endogenous variable i.e., behavioural intention.

A total of 17 draft items for the scale were generated by the researchers based on a comprehensive review of the literature. Items were developed to represent each of the four dimensions of the TPB: attitudes, subjective norms, perceived behavioural control, and behavioural intention. Individual items were scored on a five-point Likert scale, ranging from one (strongly disagree) to five (strongly agree). A group of three doctoral-level academics reviewed the items for inclusion in the preliminary scale. The group was given background information relating to the intention to follow social distancing methods, more detailed information on the TPB and its relevance to the construction of the scale. The doctoral-level academics were asked to comment on the face validity and completeness of the items for the measurement of each dimension of the TPB. Based on analysis of the feedback, items were further refined to make the best fit for the current study. The novel questionnaire was then piloted among 50 respondents. Exploratory factor analysis was conducted on the data collected from the pilot survey. Three items out of seventeen showed poor factor loadings and as a result, were removed from the overall model. The factor loadings of the remaining 14 items (see Table 1) were greater than the threshold value of 0.40 and in terms of internal reliability, the Cronbach's alpha of all the constructs was greater than the cut-off value of 0.70 (Hair Jr et al., 2016).

Table 1. Exploratory Factor Analysis (EFA) Results and Internal Consistency

Construct	Items	Factor loading	Cronbach's alpha
Subjective norms (SBN)	SBN3	0.888	0.941
	SBN2	0.873	
	SBN1	0.866	
	SBN4	0.764	
Attitude (ATT)	ATT2	0.868	0.937
	ATT3	0.840	

	ATT4	0.834	
	ATT1	0.833	
	INT1	0.858	
Intention (INT)	INT3	0.845	0.953
	INT2	0.798	
	PBC2	0.951	
Perceived behavioural control (PBC)	PBC3	0.887	0.899
	PBC1	0.885	

Tools of Analysis

Exploratory factor analysis (EFA) was conducted using IBM SPSS statistics v25.0. The measurement and structural equation models were then evaluated using the Partial Least Square Structural Equation Model (PLS-SEM) in SmartPLS version 3.3.3 (Ringle et al., 2015). PLS-SEM is a "second-generation regression technique" for complicated causal modelling, commonly known as "variance-based structural equation modelling" (Hair et al., 2011; Hair Jr et al., 2016). PLS-SEM also has numerous notable advantages over conventional regression techniques that are applicable for our investigation. Furthermore, when the goal of the research is prediction, PLS-Sem is a preferred method of hypotheses testing (Gunzler et al., 2013).

Results

Participants' Demographic Information

A total of 241 respondents took part in the current study. There were 149 (69.6%) males and 65 (30.4%) females. The majority of respondents belonged to the age group of 21 and 30 (68.7%). However, only 5.6% of all participants were over the age of 40. Table 2 reveals that the majority of respondents were having good health conditions (68.2%), whereas none of the respondents reported poor health conditions. The majority of the respondents reported their education level as postgraduation (42.1%) and only 5.6% of total participants revealed their education as secondary school or below. Finally, in terms of monthly income, the majority of respondents (46.7%) reported their monthly income as below 10000.

Table 2. Demographic Information

	Category	Frequency	Percent	Cumulative Percent
Gender	Male	149	69.6	69.6
	Female	65	30.4	100.0
Age (years)	Up to 20	12	5.6	5.6
	21-30	147	68.7	74.3
	31-40	43	20.1	94.4
	Above 40	12	5.6	100.0
Health Condition	Poor	0	0.0	0.0
	Average	68	31.8	31.8

	Good	146	68.2	100.0
	Secondary school or below	12	5.6	5.6
Education	Graduate	61	28.5	34.1
	Postgraduate	90	42.1	76.2
	Above postgraduate	51	23.8	100.0
	Below 10000	100	46.7	46.7
Monthly	10000-25000	37	17.3	64.0
Income	26000-4000	32	15.0	79.0
(rupees)	41000-55000	18	8.4	87.4
	Above 55000	27	12.6	100.0
Total		214	100.0	

Valuation of Measurement Model

Table 3 presents the indicator reliability, Composite reliability, average variance extracted (AVE) and Cronbach's alpha (α). Composite reliability (CR) and indicator loadings greater than 0.70 are regarded as reliable (Hair et al., 2011). The indicators' convergent validity has been established, with AVE exceeding the 0.50 threshold value (Sarstedt et al., 2020). According to Hair Jr et al., (2016) a Cronbach's Alpha value of 0.70 and above is satisfactory. The Alpha value in the current study is above the threshold level, confirming that the scale is reliable and valid. Loadings of 14 items retained in the model (see Table 3) ranged from 0.808 to 0.973.

Table 3. Reliability and Convergent Validity Outcomes

Construct	Items	Factor Loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Attitude (ATT)	ATT1	0.94	0.938	0.955	0.843
	ATT2	0.944			
	ATT3	0.939			
	ATT4	0.845			
Intention (INT)	INT1	0.953	0.953	0.97	0.914
	INT2	0.954			
	INT3	0.961			
Perceived behavioural control (PBC)	PBC1	0.973	0.901	0.927	0.81
	PBC2	0.911			
	PBC3	0.808			
Subjective norms (SBN)	SBN1	0.941	0.942	0.959	0.853
	SBN2	0.931			
	SBN3	0.939			
	SBN4	0.882			

The discriminant validity was determined by utilising the Heterotriat-Monotrait correlation (HTMT). The HTMT values shown in Table 4 are less than the cut-off of 0.85 (Sarstedt et al., 2020). As a result, the measurement model exhibits discriminant validity and the model's constructs are all distinct from one another.

Table 4. Discriminant Validity Results

	Attitude	Intention	Perceived behavioural control	Subjective Norms
Attitude				
Intention	0.671			
Perceived behavioural control	0.182	0.199		
Subjective Norms	0.623	0.696	0.138	

Structural Model Assessment

Collinearity between the constructs should also be verified while evaluating the structural model. A VIF equal to or more than five specifies the existence of multi-collinearity between the variables. All of the VIF scores in the current model are less than 5, indicating that there is no issue of multicollinearity (see Annexure 1). The model was then evaluated in terms of explanatory power (R^2) and predictive relevance (Q^2). The R^2 values "of 0.25 is considered as weak explanatory power, whereas 0.5 is moderate and 0.7 is considered to have strong explanatory power". While the threshold values for Q^2 greater than 0.50, 0.25, and 0 represent the PLS-path model's large, medium, and small predictive relevance, respectively (Hair et al., 2019). ATT, SBN and PBC explain 54.4 per cent of the variance in intention in the current study. As a result, the explanatory power of the model is moderate. Figure 1 depicts the study's structural model.

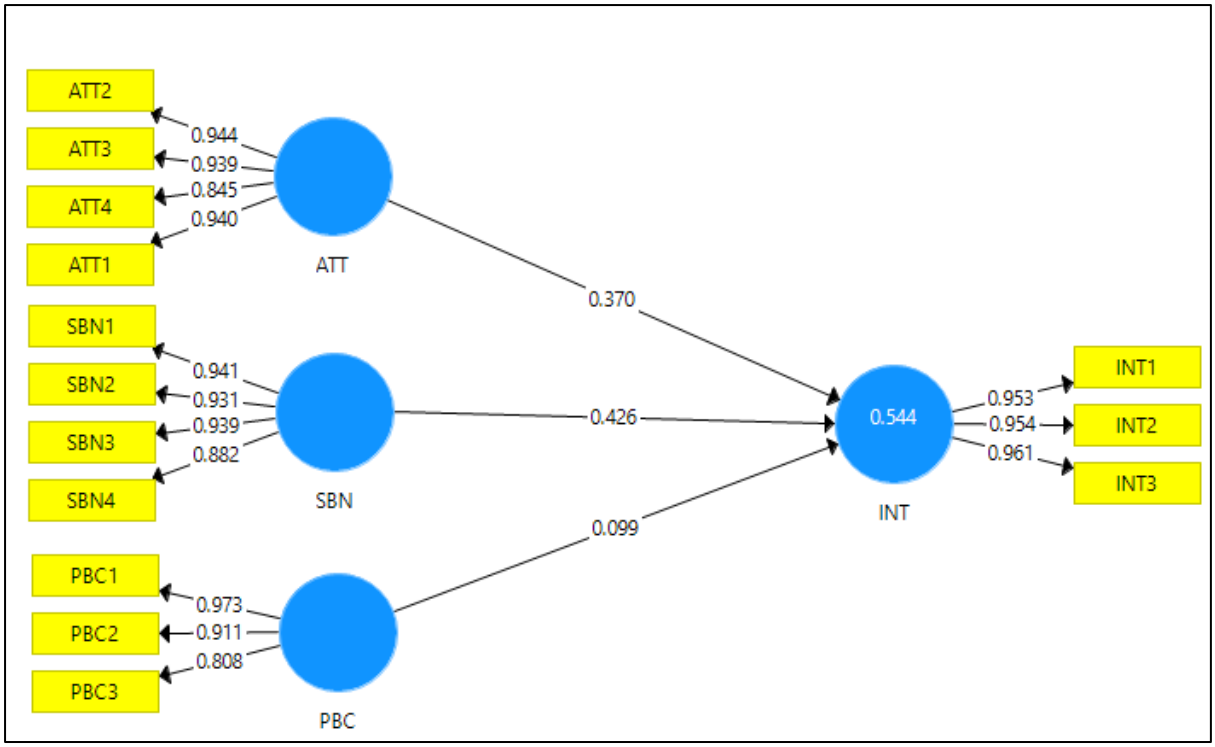


Figure 2. Structural Model

P_values, T statistics and beta coefficients from the structural path analysis are presented in Table 5. Attitude towards following social distancing norms has a significant positive effect on behavioural intention. As people demonstrate a positive attitude towards methods of social distancing, the intention to follow social distancing increases with β = 0.37, p<0.001. Likewise, the impact of subjective norms on intention was statistically significant (β= 0.426, p<0.001). In terms of the impact on intention, perceived behavioural control (β= 0.099, p<0.05) also demonstrated a significant influence. Thus, the empirical outcomes of the study supported all the formulated hypotheses (H1, H2 and H3).

Table 5. Hypotheses Testing Results

Hypotheses	Relationship	Beta coefficient	P value	LLCI 0.025	ULCI 0.975	Decision
H1	ATT -> INT	0.37	0	0.208	0.545	SUPPORTED
H2	SBN -> INT	0.426	0	0.235	0.592	SUPPORTED
H3	PBC -> INT	0.099	0.048	-0.01	0.183	SUPPORTED

The blindfolding technique was utilized to analyse the model's predictive relevance. The result shows that behavioural intention has a medium prediction accuracy of 48.1%. The PLS predict with 10 folds and 7 repetitions was also used to examine predictive relevance. It aids in the examination of endogenous variable prediction abilities using the items in the measurement model. The difference in MAE values between the PLS-SEM and LM models (naive benchmark) can be seen in Annexure 3. Because almost all of the Q^2 scores

were greater than zero and the MAE of the PLS-SEM model was less, the model produced fewer errors; as a result, the model has predictive value. Hence, the proposed model can accurately assess the exogenous variable (intention).

Discussion

Social distancing measures were promoted and promulgated as the only panacea in the early and middle phases of the Covid-19 pandemic. These measures have proven to be significantly effective in reducing the rate of Covid-19 infections (Courtemanche et al., 2020; Thu et al., 2020). Despite this, stigmatisation and widespread noncompliance with social distancing norms were prevalent in various communities (Tomczyk et al., 2020). Thus, the current study attempted to predict people's intentions to adhere to social distancing methods using the theory of planned behaviour (Ajzen, 1991).

In the first hypothesis (H1) it was anticipated that the attitude of people towards social distancing has a significant impact on their intention to follow social distancing measures. The empirical outcomes revealed that the more people have a positive attitude towards social distancing the more they intend to follow social distancing measures. These results corroborated the findings of previous research studies (Kirk & Haegele, 2019) (Selby et al., 2020) (Tomczyk et al., 2020). The second hypothesis (H2) predicted that the subjective norms have a significant impact on the compliance intentions of people. Our empirical results supported H2 and are consistent with the findings of existing studies (Hagger et al., 2020) (Das et al., 2021). During the Covid-19 crisis, family, friends, employers, and religious leaders all played important roles in positively influencing individuals' socially appropriate behaviour. Finally, the third hypothesis (H3) anticipated that the intention to comply with the measure of social distancing is significantly affected by perceived behavioural control. The results of the current study corroborated the findings of Das et al. (2021) and Adiyoso & Wilopo (2021). According to these studies, the more likely a person perceives having the resources, skills, and ability to maintain social distancing, the more likely he or she positively intends to adhere to social distancing measures.

Practical Implications

The implications of this study suggest that social distancing measures have been effective in reducing the spread of Covid-19, but there are still challenges with noncompliance and stigmatization in various communities. Therefore, it is important to understand what factors influence people's intentions to adhere to social distancing methods. The study found that people's positive attitudes towards social distancing, the influence of subjective norms from family, friends, employers, and religious leaders, and perceived behavioural control were all significant predictors of their intention to comply with social distancing measures.

These findings have important implications for public health and policymakers. Public health officials and policymakers can use this information to develop targeted interventions that address the specific factors influencing noncompliance with social distancing measures in different communities. For example, they can leverage the influence of subjective norms by partnering with community leaders to promote social

distancing practices. Additionally, interventions that increase perceived behavioural control, such as providing access to resources and training on social distancing practices, may also be effective in increasing compliance.

Furthermore, this study highlights the need for continued education and awareness campaigns to promote positive attitudes towards social distancing measures. This can help combat stigmatization and increase acceptance of social distancing as a necessary measure for public health. Ultimately, the success of social distancing measures in reducing the spread of Covid-19 depends on widespread compliance, and understanding the factors that influence compliance is critical for achieving this goal.

Conclusion, Limitations and Future Research Scope

In conclusion, this study aimed to predict people's intentions to comply with social distancing measures during the Covid-19 pandemic using the theory of planned behaviour. The findings indicate that positive attitudes towards social distancing, subjective norms, and perceived behavioural control significantly impact individuals' compliance intentions. Family, friends, employers, and religious leaders played important roles in positively influencing socially appropriate behaviour during the pandemic. The results of this study provide valuable insights for policymakers and health officials to develop effective strategies to promote compliance with social distancing measures, particularly during times of crisis. Overall, promoting positive attitudes, enhancing perceived behavioural control, and fostering social support are crucial in promoting adherence to public health measures such as social distancing.

Despite the significant contributions of this study to understanding people's adherence to social distancing measures during the Covid-19 pandemic, some limitations should be acknowledged. First, the study relied on self-reported data, which may be subject to response bias and social desirability bias. Second, the study did not consider the influence of demographic factors such as age, gender, education, and income on social distancing intentions. Third, the study only focused on the theory of planned behaviour, and other psychological theories could also have provided additional insights into people's compliance with social distancing measures. Finally, the study was conducted at a specific point in time, and the results may not reflect changes in people's attitudes, norms, and perceived behavioural control towards social distancing measures in different phases of the pandemic.

Future research can address the limitations of the current study by exploring new dimensions of social distancing adherence. Researchers can incorporate objective measures of social distancing, such as GPS tracking or wearable technology, to overcome the limitations of self-reported data. Additionally, future studies can investigate the influence of demographic factors on social distancing adherence, including the impact of cultural and social norms on compliance behaviours. Researchers can also explore the application of different psychological theories, such as social identity theory or self-determination theory, to explain people's adherence to social distancing measures. Finally, longitudinal studies can track changes in people's attitudes, norms, and perceived

behavioural control towards social distancing measures during different phases of the pandemic to provide a more comprehensive understanding of compliance behaviours.

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