

Survival of the Fittest During Pandemics: The Role of Market Orientation, Entrepreneurial Thinking, Strategic Flexibility and Supply Chain Integration

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Abstract

Business survival remains the point of discussion among the policymakers, researchers, and regulators around the world since the emergence of COVID pandemic. The present study intends to evaluate the role of strategic skills and competencies in SMEs survival during the COVID-19. SMEs operating in manufacturing sector have been selected for data collection by using survey based questionnaire. Structural equation modeling technique has been used to evaluate the association among the independent and dependent latent constructs using the SmartPLS software. The findings of present study show that market orientation, entrepreneurial thinking, strategic flexibility significantly contribute towards the survival of SMEs. Strategic flexibility significantly and positively mediates the relationship between market orientation, entrepreneurial thinking and survival of SMEs. The supply chain integration moderates the relationship between strategic flexibility, entrepreneurial thinking and survival of SMEs. The findings of current study outline the implications for the owners/managers of SMEs and regulatory authorities in understanding the significance of market orientation, entrepreneurial thinking, strategic flexibility, and supply chain integration towards the survival of SMEs.

Keywords: Survival of the fittest, SMEs, pandemics, strategic flexibility, market orientation, entrepreneurial thinking, supply chain integration.

1. Introduction

World has witnessed pandemics during this century; for instance, in 2003, Asia suffered from the deadly disease known as SARs (severe acute respiratory syndrome) which caused

the thousands of lives in Asian region and eventually people lost their jobs due to low survival rate of SMEs in the region (Fjader, 2018). The financial crises 2008/09 caused the downturn recession across the globe (Lee, 2017). This financial crisis affected the SMEs in American, European, as well in Asian region by decreasing in demand, supply shortage and extension of payments. The attack of swine flu created pandemic in France and affected the European region and this pandemic exoriated the survival of SMEs (Seale et al., 2009). Later, in early 2014 Ebola virus disease attack has been evident in West Africa and this outbreak has been observed across the Africa, which caused human as well as SMEs low survival rate (Bali et al., 2016). The potential growth or survival of SMEs affected by the pandemic of EVD with the loss of human capital, high economic and social burden (Huber, Finelli, & Stevens, 2018). All the above-mentioned pandemics except financial crises 2008/09 were regional and affected the regions. However, the recent outbreak of pandemic novel coronavirus known as COVID-19 is much like the financial crises however, the uniqueness of novel COVID-19 as compared to financial crises is global and suspended SMEs for the unknown period due to lockdowns (Wymeersch, 2020; Gupta et al., 2019).

Organizations needs to deal with series of problems during the crises period in capacity of their competencies and abilities. Organizations match their capabilities with activities during the crises period to ensure the organizational survival. The current study tests the influence of market orientation (MO), entrepreneurial thinking (ET)) on survival of SMEs in the presence of strategic flexibility (SF) as mediator and supply chain integration (SCI) as moderating factor. The present study considered the manufacturing sector SMEs operating in Pakistan as population. "Survival of the fittest" was the result of evolutionary theory given by Darwinian which describes the natural selection mechanism. The underpinning theme behind the word "fitness" was reproductive success. According to Darwinian terms this phrase explains as "survival of the form that will leave the most copies of itself in successive generations" (Rogers, 1972).

The literature shows that market orientation skills facilitate the SMEs in identifying and analyzing the relevant stakeholders, customers, and competitors to ensure profitability or survival (Acosta et al., 2018). During these pandemics MO facilitates the SMEs in understanding, attracting, and retention of customers (Scott & Rutner, 2019). Entrepreneurial thinking is process of continuously re-evaluating the situations/ risks, formulation of strategies, modification of organizational structure. This entrepreneurial capability facilitates the SMEs in identifying and exploitation of untapped opportunities (Neumeyer & Mckenna, 2016). Literature from the developing countries affirms that SMEs lack in MO and ET resultant lower survival rate (Octavia & Ali, 2017). Despite literature post-pandemic period evident that MO has significant linked with business performance (Grewal & Tansuhaj, 2001).

Post pandemic literature emphasizes the large and heavy industries and factors affect their survival and strategies or capabilities facilitate them in survival. However, a limited literature has been reported in the domain of SMEs (Grewal & Tansuhaj, 2001). The current study intents to predict the strategic skills and competencies significantly influence the survival of SMEs. The present study considered the MO, and ET on survival of SMEs. Furthermore, the current study considered the SF as mediating factor because if the organizational structure/ process is flexible there is high chances of survival particularly

during pandemics. Previously, during the financial crises SMEs were also affected through the supply-side factors. Hence, the current study considered the supply-side factor as moderating factor between SF and business survival. The findings of present study provide the implication for the managers/owners of SMEs, regulatory authorities, and policymakers in understanding the significance of strategic skills and competencies towards the survival of SMEs.

2. Literature Review and Theoretical Framework

2.1 Survival of SMEs

How organizations in social-economic environment evolve? How do they adapt and emerge with environmental pressures? What capabilities and resource determine the survival of organizations with hyper-competitive environment? Indeed, the origin of species by Charles Darwin was a great contribution and it also contribute significant in development of organizational and management theories particularly on evolution of organizations. However, in new dynamics and hyper competitive environment in 21st century, there is a need to explore and understand the “fascinating but difficult new questions about the complex nature of the relationship between brain, genes, human, social behavior or individuals and organizations” (European Science Foundation’s Standing Committee for the Social Sciences, 2013).

2.2 Market Orientation

The literature on financial and economic crises facilitate the managers in understanding and highlighting the need for effective and efficient management (Champion, 1999), to ensure the survival and sustainability mechanism. Specifically SMEs from the developing countries operating the manufacturing sector must be investigated in terms of market innovation, to improve placement, product design, pricing, and promotion (OECD, 2005). This market innovation can be a possible factor that contribute significantly in the survival or sustainability of firm (Naidoo, 2010). Literature already acknowledges that based on the innovation process firm’s introducing new services and products were considered as critical factor indeed firm’s survival. Considering the importance of market orientation, it can be hypothesized that:

- **H₁:** Market orientation has significant relationship with survival of SMEs.

2.3 Entrepreneurial Thinking

As per above discussion the theory of “survival of the fittest” drawn the conceptualization from the generalized concepts in biological evolution to take organizational change under consideration. In the domain of biology evolution process is “a long lapse of time” though mechanisms of “variation of genotypes”, selection of the “consequent phenotype” and retention of the “underlying genotype”. That genotype is explained as set of information inherited by respondent from its parents, which has the potential or can be transmitted to future generations.

In the family firm, “... the intimate connection between family and business is considered natural and compatible” (Davis, 1968). This connection between family and business extends to future generations, which is although a natural but still a significant and difficult

process for the sustainability and survival of businesses (Vancil & Pendell, 1987; Farquhar, 1989). Furthermore, literature affirms that lack of proper ET is key factor affect the sustainability and impediment to survival (Beckhard & Dyer, 1983; Handler & Kram, 1988). Thus, it is hypothesized that:

- **H₂:** Entrepreneurial thinking has significant relationship with survival of SMEs.

2.4 Strategic Flexibility

SF was considered as one of the key components in the hypercompetitive and highly sensitive markets. Literature affirms that established paradigms of competitive advantage, survival, and sustainability of organizations have limited applicability. During the last decade, SMEs and large scale organization experienced “a fundamental shift in the rules of competition and the way the game of competition is played” (Ilinitich, D'Aveni, & Lewin, 1996). The organizations need to rely on SF along with unique resource and capability to achieve the survival and competitive advantage in the hypercompetitive markets (Volberda, 1996). Survival of firms relay on the SF which enables the firms to compete in hypercompetitive markets successfully to ensure their survival. Firms operating in highly dynamic environments seek to ensure their sustainability and survival through continuously changing and generating new strategies, processes of deftness and comprehension. Thus, firm’s ability to adopt and act rapidly as key determinant of higher level of performance and survival in manufacturing industries particularly in domain of family-owned businesses, because family-owned business work on traditional patterns. Furthermore, literature suggests that SF is multi-dimensional measure including; 1) marketing flexibility, 2) production flexibility (resources and coordination flexibility), 3) competitive flexibility this model documented as “Flexibility Triad Model” (Yip, 1989). Thus, we can formulate our hypotheses as:

- **H₃:** Market orientation has significant relationship with strategic flexibility.
- **H₄:** Entrepreneurial thinking has significant relationship with strategic flexibility.
- **H₅:** Strategic flexibility has significant relationship with survival of SMEs.
- **H₆:** Strategic flexibility significantly mediates the relationship between market orientation and survival of SMEs.
- **H₇:** Strategic flexibility significantly mediates the relationship between entrepreneurial thinking and survival of SMEs.

2.5 Supply Chain Integration

The emergence of SCI has been acknowledged as a perfect mechanism for SMEs. The recent literature empirically affirms that SCI enable the SMEs in attaining competitive position in market and improve the performance (Munir et al., 2020). Moreover, the literature also documented that the presence of SCI significantly brings the concept of co-creation among the SMEs in industry. The distribution of information about the products, customers, market, and potential markets through interconnection significantly establish the strategic SCI (Phan et al., 2020; Tian et al., 2021). Moreover, literature shows that the departmental integration creates the facilitation and the creation of SCI with partners (Huo et al., 2014). In addition to that the empirical literature indicates that MO is significantly

associated with the SCI (Suryanto & Mukhsin, 2020). Furthermore, ET or capabilities significantly support the SCI in SMEs (Ketchen & Craighead, 2021). There is positive and significant association between SF and SCI that has been documented in literature (Haq et al., 2020). Considering the above discussion the present study proposes that:

- **H₈**: Supply chain integration significantly moderates the relationship between market orientation and survival of SMEs.
- **H₉**: Supply chain integration significantly moderates the relationship between entrepreneurial thinking and survival of SMEs.
- **H₁₀**: Supply chain integration significantly moderates the relationship between strategic flexibility and survival of SMEs.

2.6 Survival-Based Theory

The theory claims that the fittest species survival consider the results of direct relationship between the individuals, species, and populations. Furthermore, McCarthy et al., (2010) argue that pace of change and complexity in business environment is increasing interconnected, so to understand this phenomenon and change co-evolutionary approach is most suitable. Since last few decades' narratives of evolutionary approach have been emerging in domain of social sciences, from cultural studies to economics. These developments were the results of literature which attempts to test the evolutionary approach on human society.

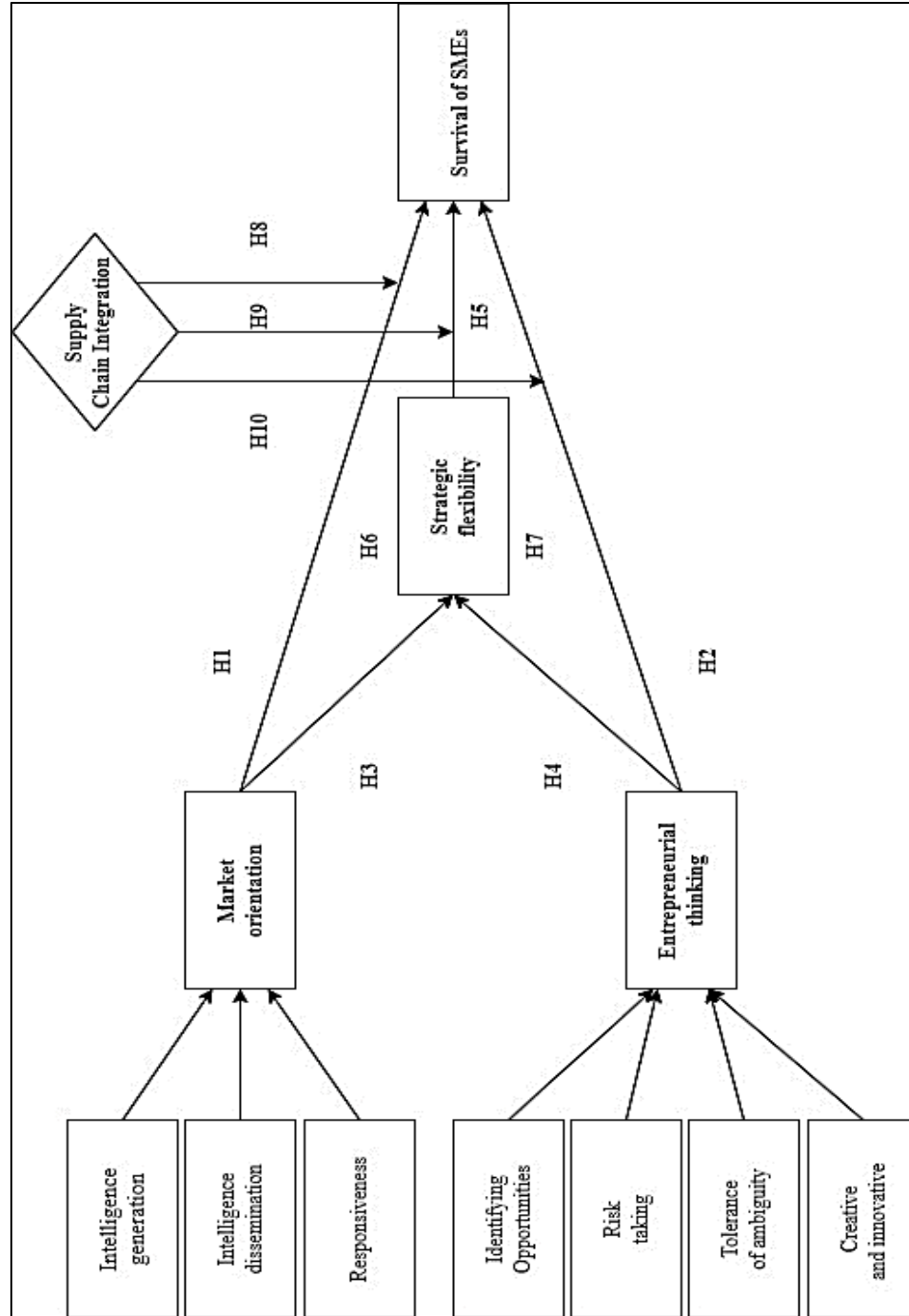


Figure 1: Theoretical Framework

Based on the evolution theory “survival of fittest” firms learn from the competitive environment and ensure their survival hence, the MO and ET enable the SMEs to survive in competitive environment. Moreover, framework proposed that strategic flexibility along with other strategic skills and competencies facilitate the SMEs in survival hence the present study proposed that SF mediates the association between MO, ET, and survival of SMEs. The SCI also strengthen the association between the strategic competencies/skills and survival of SMEs. Hence, the present study proposes that SCI significantly moderates the association between MO, ET, SF, and survival of SMEs.

3. Methodology

The present study uses the structural equation modeling technique for testing the hypotheses. The underlying reasons for selection of SmartPLS statistical tool was the current study intent to contribute to extension of underpinning theory by providing empirical evidence. Furthermore, the theoretical framework of current study is formative and reflective hence, Smart PLS is considered more appropriate for reflective and formative constructs (Jarvis et al., 2003). The population for this study is SMEs from manufacturing sector of Pakistan. This industry, namely manufacturing sports goods industry, surgical instrument industry, leather manufacturing, and textile. A total of 1,200,000 SMEs operating in manufacturing sector of Pakistan were registered with the relevant chambers during 2018-19 (Baig, 2019). To calculate minimum sample size, G*Power 3.1.9.2 tool was used based on linear multiple regression with the effect size 0.15, power (1- β err prob) 0.99, α err prob 0.05 (Cohen, 1988). The minimum sample of 175 SMEs is large enough based on a priori calculations. A total of 700 questionnaires were distributed and a self-administration survey-based method was adopted in the current study. Total responses received were 410 out of which 389 were considered good with the response rate of 53%. The primary data were collected during the first two weeks of May 2020. The final version of the survey questionnaire consisted of 69 items to measure the constructs.

4. Results and Analysis

Validity has been checked through assesment of measurement model. The assesment of measurement model follows two factors convergent reliability, validity and assesment of discriminant validity. While sturctural model assesment includes testing of hypotheses.

4.1 Factor Analysis

Factor analysis is the process to assess the variability among the observed correlated variables in terms of possible lesser number of unobserved variables (Byrne, 2005). Basically this statistical tool is related with the common variance method. Table 1 shows the results of loading regarding their constructs indicate that loading value of intelligence disssmination, idnetifying opportunity, SF and survival of SMEs are lesser than their thrashold value of 0.50 (Tzeng et al., 2007). Hence, these items were not considered for further analysis.

The present study evaluates the reliability and convergent validity using Cornbach' alpha, rho_A, CR, and AVE. The results of convergent validity assesment were reported in table

1. The cut-off value of Cronbach's Alpha, rho_A, and CR is 0.70 (Taber, 2018). The rho_A is important for the evaluation of internal consistency. The findings of current study shows the value of all the indicators within the threshold value (Ab Hamid et al., 2017).

Table 1: Factor Loading and Convergent Reliability and Validity

Items	Constructs	Factor Loading	Cronbach's Alpha	rho_A	Composite Reliability	AVE
MIG1	MIG	0.743	0.770	0.794	0.720	0.507
MIG2		0.512				
MIG3		0.519				
MIG4		0.567				
MIG5		0.592				
MIG6		0.783				
MID1	MID	0.913	0.704	0.702	0.885	0.632
MID2		0.911				
MID3		0.553				
MID4		0.503				
MID5		0.310				
MID6		0.669				
MRES1	MRES	0.715	0.790	0.802	0.890	0.792
MRES2		0.845				
MRES3		0.531				
MRES4		0.983				
MRES5		0.562				
MRES6		0.648				
ETIO1	ETIO	0.619	0.767	0.886	0.816	0.601
ETIO2		0.936				
ETIO3		0.656				
ETIO4		0.728				
ETIO5		0.836				
ETIO6		0.699				
ETIO7		0.513				
ETIO8		0.768				
ETIO9		0.657				
ETIO10		0.632				
ETIO11		0.622				
ETIO12		0.894				
ETIO13		0.751				
ETIO14		0.475				
ETIO15		0.365				
ETRT1	ETRT	0.758	0.801	0.799	0.804	0.543
ETRT2		0.692				
ETRT3		0.418				
ETRT4		0.518				
ETRT5		0.536				

ETTA1	ETTA	0.806	0.914	0.915	0.940	0.796
ETTA2		0.726				
ETTA3		0.789				
ETTA4		0.890				
ETCI1	ETCI	0.738	0.804	0.811	0.871	0.628
ETCI2		0.559				
ETCI3		0.743				
ETCI4		0.732				
SF1	SF	0.644	0.914	0.941	0.934	0.609
SF2		0.801				
SF3		0.612				
SF4		0.665				
SF5		0.863				
SF6		0.765				
SF7		0.979				
SF8		0.601				
SF9		0.458				
SF10		0.303				
SCI1	SCI	0.524	0.855	0.534	0.773	0.535
SCI2		0.512				
SCI3		0.511				
SUR1	SUR	0.707	0.860	0.859	0.885	0.587
SUR2		0.744				
SUR3		0.779				
SUR4		0.537				
SUR5		0.474				
SUR6		0.501				
SUR7		0.727				
SUR8		0.622				
SUR9		0.417				
SUR10		0.708				

The discriminant validity is checked in assessment of measurement model. It measures all the constructs independently and they should not be highly correlated with each other (Shaffer et al., 2016). The results of discriminant validity are showed in table 2. In literature, there are two different approaches has been followed by the name of Fornell-Larcker and Heterotrait-Monotrait (HTMT) (Al-Marroof & Al-Emran, 2018). For the assessment of discriminant validity first approach, Fornell-Larcker has been followed, according to previous literature hence HTMT approach is more appropriate. Moreover, the value of HTMT explained by the two different approaches. According to first approach threshold value is considered must not be higher than 0.90 (Gold et al., 2001). While according to second approach considered must not be higher than its threshold value of 0.85 explained by (Kline, 2011). This study considered the cut-off value of HTMT is 0.90 for assessment of discriminant validity.

Table 2: Discriminant Validity

	MIG	MID	RES	MO	ETIO	ETRT	ETTA	ETCI	ET	SF	SCI	SUR
MIG	-											
MID	0.286	-										
RES	0.410	0.232	-									
MO	0.299	0.453	0.414	-								
ETIO	0.833	0.670	0.871	0.808	-							
ETRT	0.700	0.679	0.762	0.665	0.799	-						
ETTA	0.161	0.205	0.259	0.190	0.271	0.644	-					
ETCI	0.140	0.250	0.203	0.180	0.269	0.660	0.399	-				
ET	0.649	0.720	0.722	0.647	0.770	0.891	0.784	0.816	-			
SF	0.194	0.278	0.303	0.236	0.278	0.609	0.828	0.200	0.711	-		
SCI	0.476	0.386	0.437	0.408	0.471	0.486	0.179	0.271	0.455	0.373	-	
SUR	0.324	0.335	0.359	0.316	0.301	0.314	0.279	0.276	0.357	0.293	0.728	-

4.2 Structural Model Assessment

The assessment of structural model reported the constructs are related with underpinning theory (Hair et al., 2013). For this current study, PLS-SEM being used for assessment of structural model. The findings of direct relationship are reported in table 3. The current findings show the results regarding MO and ET are positively and significantly associated with survival of SMEs ($\beta = 0.84$, $t = 2.315$, $p = 0.02$; $\beta = 0.07$, $t = 2.40$, $p = 0.02$) which affirms that strategic competencies and skills like MO and ET significantly contribute in survival of SMEs. Moreover, the MO and ET are positively and significantly associated with SF ($\beta = 0.16$, $t = 4.36$, $p = 0.00$; $\beta = 0.80$, $t = 30.38$, $p = 0.00$) which indicate that MO and ET significantly support the SF competency of SMEs. The assessment of structural model were reported in figure 2. The figure 2 indicates the value of coefficients and p-values in parentheses and the value of R^2 is 0.341 directing that latent construct explain the 34.1% of survival of SMEs.

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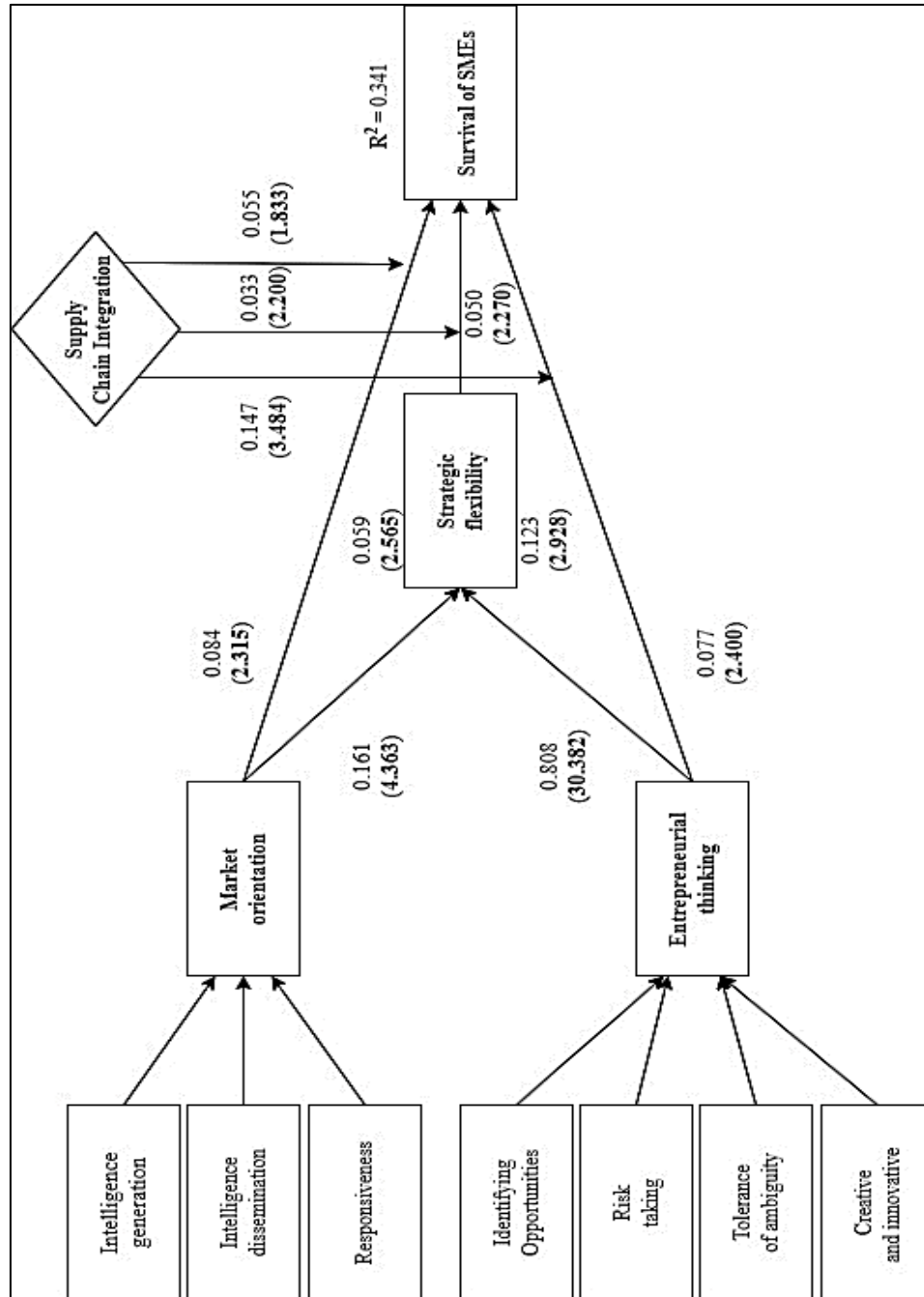


Figure 2: Structural Model - Results**Table 3: Testing of Hypothesis (Direct Relationship)**

	Coeff .	STDE V	T Statistics	P Values
H1: Market Orientation -> Survival	0.084	0.036	2.315	0.021
H2: Entrepreneurial Thinking -> Survival	0.077	0.032	2.400	0.021
H3: Market Orientation -> Strategic Flexibility	0.161	0.037	4.363	0.000
H4: Entrepreneurial Thinking -> Strategic Flexibility	0.808	0.027	30.382	0.000
H5: Strategic Flexibility -> Survival	0.050	0.022	2.270	0.013

Table 4 describes the indirect relationship between the latent constructs. The findings indicate that SF positively and significantly mediate the association between MO, ET, and survival of SMEs ($\beta = 0.059$, $t = 2.56$, $p = 0.01$; $\beta = 0.12$, $t = 2.92$, $p = 0.00$) which provide evidence that SF of SMEs positively and significantly contributes towards survival of SMEs along with MO and ET. Furthermore, SCI significantly and positively moderates the relationship among SF, ET, and survival of SMEs ($\beta = 0.03$, $t = 2.20$, $p = 0.02$; $\beta = 0.14$, $t = 3.48$, $p = 0.00$) consequently, SCI fails to moderate the association between MO and survival of SMEs ($\beta = 0.05$, $t = 1.83$, $p = 0.06$) at 5 % level of significance.

Table 4: Testing of Hypothesis (Indirect Relationship)

	Coeff.	STDE V	T Statistics	P Values
H6: Market Orientation ->Strategic Flexibility -> Survival	0.059	0.023	2.565	0.019
H7: Entrepreneurial Thinking ->Strategic Flexibility -> Survival	0.123	0.042	2.928	0.001
Supply Chain Integration -> Survival	0.732	0.031	23.403	0.000
H8: SF*SCI -> Survival	0.033	0.015	2.200	0.024
H9: MO*SCI -> Survival	0.055	0.030	1.833	0.067
H10: ET*SCI -> Survival	0.147	0.042	3.484	0.000

5. Discussion and Conclusion*5.1 Discussion*

The present study is targeted to evaluate the strategic skills and competencies that ensure the survival of SMEs. MO refers to identifying the needs and demands of customers for their satisfaction (Kiessling et al., 2016). The findings of current study are aligned with literature which affirms that MO significantly and positively linked with the survival of SMEs. SMEs were considered a very sensitive nature of businesses for long-term development, growth, and survival particularly during the political instability or any pandemics (He & Harris, 2020; Najib et al., 2021).

The ET competency facilitates the SMEs to respond pandemic and critical situation and tap the opportunities by taking risk during pandemics. Thus, SMEs need to deal with

tolerance of ambiguity by adopting innovation techniques. The findings of present study affirms that ET significantly ensures the survival of SMEs during the pandemics. The findings of present study are well aligned with the existing literature which affirms that ET is significantly linked with the survival or sustainability of SMEs during pandemics (Kottika et al., 2020; Ratten, 2020; Osiyevskyy et al., 2021).

SF is a significantly linked with sustainable growth and survival of SMEs (Suh & Lee, 2018). SF is a critical factor which ensures the survival of SMEs in pandemics or political instability (Aljuhmani & Emeagwali, 2017). Moreover, the literature affirms that MO is significantly linked with the SF of SMEs during pandemics (Herhausen et al., 2021). The empirical results of present study affirm that MO is positively and significantly linked with the SF. The ET facilitates the entrepreneurs in dealing with ambiguity and boost the innovation which is linked with SF of SMEs (Akyuwen et al., 2022). The findings of present study are well aligned with the existing literature and show a positive and significant association between ET and SF.

Considering the survival-based theory and existing literature the present study proposed that SF mediates the relationship with MO, ET, and survival of SMEs. The findings indicate that SF significantly and positively mediate the relationship between MO, ET, and survival of SMEs. Literature in the domain of SMEs argues that SF is a critical factor towards the survival of SMEs. However, none of the study documented the empirical findings on the mediating role of SF between MO, ET, and survival of SMEs. The findings of current study contribute in body of literature as well as in the underpinning theory by explains the role of SF as mediating factor between MO, ET and survival of SMEs.

During the pandemic or political instability, the most critical factor which influences the survival of SMEs is supply chain it includes both supply side and demand side (Paul & Chowdhury, 2020). Literature affirms that the SCI is significantly linked with the survival of SMEs (Scuotto et al., 2017). Based on the survival-based theory the current study considers the role of SCI as moderating factor between MO, SF, ET, and survival of SMEs. The results affirm that SCI significantly and positively moderate the relationship between entrepreneurial thinking, SF, and survival of SMEs. While, in case of MO the association is positive and insignificant between MO and survival of SMEs.

5.2 Conclusion

The present study used survival of the fittest as underpinning theory to evaluate the role of MO, ET towards the survival of SMEs. The present study proposed the relationship between MO, ET, and survival of SMEs mediated by the SF. Considering the pandemics and competitive environment the present study proposed the role of SCI as moderating factor between the MO, ET, SF, and survival of SMEs.

The empirical findings of present study concludes that MO and ET are positively and significantly associated with survival of SMEs and SF. Moreover, SF significantly and positively mediates the association between MO, entrepreneurial thinking, and survival of SMEs. The association between ET, SF, and survival of SMEs is significantly moderated by SCI. The present study concludes that MO, ET, SF, and SCI positively and significantly ensures the survival of SMEs. Moreover, the present study contributes to the existing

literature and underpinning theory by empirically documenting the association among the MO, ET, SF, and SCI and their contribution towards survival of SMEs.

5.3 Implications and Future Directions

The findings of current study facilitate the owners/managers of SMEs to understand the role of MO, ET, SF, and SCI towards the survival of SMEs. The managers/owners can comprehend how vital is the MO, ET, SF, and SCI to ensure the sustainability and survival in competitive environment and during pandemics. The underpinning objective of regulatory authorities SMEDA is to boost the economic growth of country by improving the sustainability and survival of SMEs.

The findings of current study contribute to the body of literature as well as the survival-based theory. The findings of present study affirms that the process of evolution and learning from the environment significantly enhance the chances of survival. As the present study empirically evaluates the role of MO, ET, SF, SCI to predict the survival of SMEs. The present study empirically shows that SF and SCI significantly enhance the chance of survival of SMEs during the pandemics. The future research studies need to consider the role of e-commerce skills, organizational improvisation, and management accounting to predict the survival of SMEs.

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