SMEs represent the vast majority of establishments in the Arab world and particularly in Yemen, where they represent 99% of the total number of establishments. These establishments lack a deep understanding of the importance of marketing to achieve their goals and continued growth. In addition, there are many SMEs that do not realize the concept of modern marketing, which is essential for their survival. Furthermore, the supply and demand forces of competition and the conditions of the market play a major role in determining to what extent these SMEs, in particular, and their influence on the performance of these establishments.

This study sought, firstly, to examine whether the relationship established between market orientation and performance in large business firm studies also holds in the context of SMEs in Yemen; and, secondly, to explore the potential effects of market turbulence, competitive intensity, and market growth on the relationship between market orientation and the performance of SMEs. This study was conducted in four phases, which answered the research questions and addressed different research objectives in which the output from one phase was used in the next phase. Using a sample of 246 SMEs in three governorates of Yemen—Sana’a, Ibb, and Taiz—five hypotheses were tested using structural equation modelling (SEM) via AMOS (Analysis of Moment Structures) software package Version 16.0. The findings of the hypotheses testing indicated that the two hypotheses (H1 and H2) are supported; thereby indicating that market orientation is a key determinant of two dimensions of business performance in the SMEs of Yemen—employees’ consequences and financial performance. In addition, the study did not find strong support for the moderating factor (H7) in the context of SMEs in Yemen, except the moderating impact of market turbulence (H4) and technological turbulence (H5). The robust, valid and reliable scale together with the developed model in this study can be used by managers in industry or by academicians for future research.

Accident prediction models are used to estimate accident occurrences related to various identified factors. However, human behavioural factor is always absent from a model parameter since the information is usually unavailable in accident data. This study focused on the development of a model that is capable of integrating the human behaviour, engineering and environmental factors that contribute to pedestrian accident. The developed model can be used to quantify the potential accident risks of pedestrians crossing at signalised intersections in the urban area. Petri Nets π-tool has been applied in this study to achieve integration of behavioural, engineering and environmental factors in assessing the potential risks of crossing pedestrians. Petri Nets is a flexible graphical modelling tool with a strong mathematical basis that is capable of modelling and analysing the system with multiple interactions in pedestrian accident event sequence. Signalised intersections in Kuala Lumpur were used as case studies to predict the risk probability of pedestrian accident occurrences within specific time periods. Site observations were conducted to obtain the pedestrian crossing scenario. The event sequence extracted from this scenario was translated into Petri Nets elements for model formulation. Identified factors were organised into several sub models in the hierarchical model structure. The developed model is called PedCRA (Pedestrian crossing risk assessment) model. Twelve factors were identified as the model parameters and sensitivity analysis was conducted to evaluate the effect of these parameters to the potential pedestrian risk value. The results from this analysis showed that the important parameters are the compliance behaviour of pedestrians, the volume and approach speed of vehicular traffic, the number of lanes and the existence of median. Since the model is designed to only capture an interaction with one approach of the intersections at one time, calibration is required to estimate the risk value for the intersection with 3 or 4 approaches. Validation of the model successfully compared the predicted risk value obtained from the model with the actual risk value obtained from historical accident occurrences at 30 selected signalised intersections in Kuala Lumpur. Chi-Square goodness of fit test indicated that risk values from model and accident data follow the same distribution trend at a 5 percent significance level (p = 0.05).