HOW CAN THE SMALL AND MEDIUM-SIZED ENTERPRISES (SMES) IN THE UK MAINTAIN A STRONGER COMPETITIVE ADVANTAGE AND ENSURE HIGHER AGILITY IN THE COMPETITIVE DIGITAL MARKET?

by 33595460

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Coding for marketers

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# *Overview*

Generally, firms always operate in such a way to ensure a higher competitive advantage and robust agility. Meunier et al. (2022) suggest that with the economic aftermaths of the COVID-19 pandemic, firms have learnt that technology is essential to any corporate/business setting implying that any organization that lags in taking the right move has higher risks of encountering tough operation stringencies. This paper, therefore, aims to review various literatures with a focus on SMEs and their sustainability goals, agility objectives, and competitiveness. It also investigates the various effective digital (marketing) technologies that firms could employ to ensure they remain sustainably reliable throughout.

# *Literature Review*

According to Donthu & Gustafsson (2020), 53.6% percent of the world's population use various digital platforms for entertainment, education, and information acquisition. Out of these users, a significant proportion contemporarily relies on the media to make decisions regarding online purchases. Another study by Haenlein et al. (2020) confirms that the majority of users on digital platforms are youths, with the most used platforms being social media sites like Instagram, Facebook, and TikTok. Based on this finding, a study by Egidaw (2022) asserts that companies have had no option but to reform and refine their ways of marketing and promotion from traditional to more engaging digital methods.

Correspondingly, a study by World Bank (2021) suggests that with the lessons learnt from the pandemic, businesses have realized that their operations can be progressive and remain efficient only if they integrate relevant modern technologies into their systems. A vivid example of this is the current tough post-pandemic business environment that has escalated the need for businesses to deploy modern ICTs in their operations (Contractor, 2021). According to Gov.UK (2022), the UK economy has faced the swiftest shift in the digital economy, with most giant corporations embracing digital marketing. A study by Li (2020) propounds that the Amazon and Google are ahead of the rest in technological innovations. Dey et al. (2019) argue in their study that with such large firms in place, the UK business environment has remained highly competitive, especially for small and medium business entities.

An empirical study by Dwivedi et al. (2022) suggests that business agility and competitiveness for corporate giants like Amazon and Google highly depend on their abilities to augment necessary technologies. Similarly, according to Aldianto et al. (2021) and Ghobakhloo (2020), large firms tend to remain productively and sustainably agile and competitive during economic difficulties mainly because they embrace digital technology. As most studies primarily focus on how major companies and organizations reap hugely from digital marketing, there is a very significant gap in the studies regarding the role of SMEs in technological innovation, ICT expenditure, and the duos’ merits. In other words, most researchers on the subject matter do not provide detailed insight into how small and medium businesses would reap a greater return on investment (ROI) as a result of taking part in technological innovation processes and digitalizing their marketing strategies.

On the same note, Corredoira et al. (2021) found that there is a greater rate of participation in ICT research and development (R&D) among large corporations and corporate entities, as compared to small and medium-sized enterprises (SMEs).. This reflects a huge gap worth exploring in detail to ascertain why these events empirically happen. The fact that most studies overlook the role of SMEs in technological R&D activities further makes this gap an interesting and sensitive facet to examine. This facet is essential to explore in the sense that according to Colombelli et al. (2019) and Corredoira et al. (2021), the propensity to patent, which is defined as the full measure of the newly innovated technologies, bears inverse proportionality with the size of the firm. According to Corredoira et al. (2021), this ratio factor implies that as the size of the firm decreases, its propensity to ICT patent increases simultaneously. In other words, this concept insinuates that it is prematurely unrealistic to conclude that only large companies have the ultimate capacity to set the tech operation precedence for SMEs in the tech world. This is because the vice-versa is inevitably highly possible when the propensity score matching is accurately done (Lee et al., 2020).

According to Wu et al. (2022), the realization that SMEs in the digital market play active, pivotal roles in technological innovation has also resulted in numerous insights about the approaches and models by which SMEs enhance and introduce new services, products, and operations. These models and approaches also improve their agility and competitive advantage. A study by Dias et al. (2022) suggests that small businesses practically possess a more substantial innovative advantage over their counterpart giant corporates due to variations in their management systems and structures. A similar implication is depicted in contemporary studies by Wu et al. (2022) and Stimpson (2019), which argue that large firms have complex, unconducive bureaucracies that undermine risky and critical situational analyses and effective decisions. Findings by Stimpson (2019) also predicate that large firms encounter multiple layers of intra-organizational resistance, which is not the case with SMEs. Based on this, it is practically ideal for the latter to implement archetypical technologies to remain agile and sustainable during tough socioeconomic times.

Wu et al. (2022) suggests that small-sized firms have extremely flexible production opportunities compared to large companies. As a result, they should swiftly adjust and cope with the changes in market demand within the shortest time possible and reach their full potential of competition capacities. Key reasons behind this include the SMEs’ ability to use multiple market-specific digital promotion strategies simultaneously. In simple terms, most SMEs should put technological innovation at the forefront of their competitive advantage, unlike large firms, which often primarily focus on promoting org-based successful researchers to higher company ranks/positions (Dias et al., 2022). As a result, as though this is not exhaustive and is inconclusive, SMEs should embrace SEO-based content creation, SEO marketing, and paid social adverts. Moreover, a study by Corredoira et al. (2021) argues that SMEs should also enhance socioeconomic fora engagement, influencer/social media marketing, email promotion, and remarketing, among others. Various studies have shown that although not all of these methods work for large companies, they are suitable and have proven efficient for most SMEs (Wu et al., 2022). Therefore, this study tests three relevant hypotheses namely (hypothesis 1: Higher investments in digital marketing by SMEs in the UK lead to higher ROI/revenues, hypothesis 2: Higher expenditure on digital marketing techniques leads to higher (online) sales by SMEs in the UK and hypothesis 3: Higher timely expenditure on and integration of the right digital marketing tools leads to higher agility and sustainability of the target SMEs, increasing the number of SMEs in the UK) to ascertain that the SMEs in the UK have greater potential in digital marketing and that they should implement various sophisticated technologies in their operations to gain a higher competitive advantage and ensure more robust market agility.

# *Data collection and analysis*

Strangely, the increased competition in the digital market within the UK is the biggest challenge small and medium enterprises (SMEs) are experiencing. As a result, it is essential to understand how SMEs can maintain a stronger competitive advantage and higher agility. Four main statistical variables have been realized to achieve this: total online sales, digital marketing investment or expenditure, return on Investment (ROI), and the corresponding number of established SMEs.

To start with, the digital marketing expenditure or investments variable, it is important to understand as it gives insight into the resources available to SMEs and how these resources should be utilized. Also, the digital marketing expenditure variable can offer valuable information on the marketing strategy for a company's effectiveness and how this strategy can be improved. Similarly, the SME's return on investment (ROI) or revenue variable clarifies the marketing efforts of SMEs and determining if the expenditure made is worth the return. On the note, the total online sales variable in this study is crucial as it indicates the total amount of sales generated through the digital channels. In particular, this variable is of significance in understanding the success of an SME’s strategy with regard to digital marketing. The total count of established SMEs variable is investigated since it provides an idea of how the digital market is competitive, thus providing a comprehensive insight into the level of competition and challenges the SMEs face.

Regarding data collection, for this study to investigate and explore the aforementioned variables, the intended database is World Bank. World Bank is a reliable, easy-to-access, and accurate data source which gives detailed quantitative data on a wide range of business-related topics from various countries (World Bank, 2019). However, the World Bank database may not provide all the necessary data that is specific to the UK, and this might be problematic as the current research is focused on the UK. Regardless, the data collected from World Bank would be reliable and suitable for the study, and relevant case studies from other European nations obtained from the database would also have greater implications for this study.

Consequently, the collected data will be analyzed by standard linear regression analysis. Standard linear regression analysis is used because it allows the exploration of the correlation between the variables realized and also helps in the determination of any outliers in the data (Schneider et al., 2016). Standard linear regression analysis uses dependent and independent variables. The dependent variable used in our study is capital investment/expenditure while the independent variables used in our study includes online sales and revenue (ROI). Standard linear regression analysis also gives an easy and simple way to examine the effect of each variable later in the overall outcome. Nevertheless, it should be noted that linear regression analysis have some limitations. For instance, it is limited in a manner that it makes an assumption that the data follows a normal distribution and that the relationships between the variables are linear (Yadav, 2022). Simply, this means that any relationships between the variables that are non-linear may not be taken into account. Additionally, linear regression analysis may not be suitable when it comes to analyzing datasets with a high degree of variability or datasets that come in large quantities. Regardless, the merits are significant and render it suitable for data analysis for this study.

# *Results and Data Analysis*

Notably, the increased competition in the digital market in the UK is the biggest challenge SMEs are experiencing, thus it is essential to understand how small-sized businesses can maintain a stronger competitive advantage (Scuotto et al., 2021). To achieve this, the following statistical variables were analysed: total online sales, digital marketing investment/expenditure, and ROI.

The following hypothesis were formed and tested on the study’s SME dataset;

* Hypothesis 1 - Higher investment on digital marketing by SMEs leads to higher ROI/revenue.
* Hypothesis 2 - Higher investment on digital marketing leads to higher (online) sales by SMEs.

## *Hypothesis Testing*

**Hypothesis 1** - Higher investment on digital marketing by SMEs leads to higher ROI/revenue.

Chart, scatter chart

Description automatically generated

Figure 1Investment on Digital Marketing & Revenue.

From the above plot, there is a positive correlation between costs and revenue. This observation implies that higher investment on digital marketing leads to higher ROI o revenues for SMEs.

Chart, scatter chart

Description automatically generated**Hypothesis 2** - Higher investment on digital marketing leads to higher (online) sales by SMEs.

Figure 2 Investment on Digital Marketing & Sales.

From the above plot, there is a positive correlation between costs and sales. This observation implies that higher investment on digital marketing does lead to higher (online) sales for SMEs.

## *Linear Regression*

Two linear regression models were created:

### *Model 1*

Linear regression was done using costs as the capital investment (predictor) and sales as the depended variable and the following results were found;

Call:

lm(formula = sales ~ costs, data = select\_data)

Residuals:

Min 1Q Median 3Q Max

-99281 -9267 -5250 1405 395550

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 9.885e+03 1.071e+03 9.233 <2e-16 \*\*\*

costs 2.585e-02 1.469e-03 17.601 <2e-16 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 26620 on 972 degrees of freedom

(26 observations deleted due to missingness)

M ultiple R-squared: 0.2417, Adjusted R-squared: 0.2409

F-sttistic: 309.8 on 1 and 972 DF, p-value: < 2.2e-16

### *Results interpretation of model 1*

The above results imply that there is a positive correlation between costs and sales. The cost coefficient (2.585e-02) is statistically significant, as indicated by the p-value (<2e-16). This indicates that there is a statistically significant relationship between costs and sales. Thus, higher investment on digital marketing leads to higher (online) sales by SMEs. We accept the hypothesis.

### *Model 2*

Linear regression was done using costs (predictor) and revenue (depended) variable and the following results were found;

Call:

lm(formula = revenue ~ costs, data = select\_data)

Residuals:

Min 1Q Median 3Q Max

-4046366 -84575 -57551 31530 4093500

Coefficients:

Estimate Std. Error t value Pr(>|t|)

(Intercept) 1.246e+05 1.205e+04 10.34 <2e-16 \*\*\*

costs 7.961e-01 1.653e-02 48.15 <2e-16 \*\*\*

---

Signif. codes: 0 ‘\*\*\*’ 0.001 ‘\*\*’ 0.01 ‘\*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 299600 on 972 degrees of freedom

(26 observations deleted due to missingness)

Multiple R-squared: 0.7046, Adjusted R-squared: 0.7043

F-statistic: 2319 on 1 and 972 DF, p-value: < 2.2e-16

### *Results interpretation of model 2*

The linear model used to predict revenue from costs has shown a relatively high R-squared value (0.7046), indicating that the model fits the data suitably. The intercept coefficient estimates 1.246e+05 which is equal to 124600 implies that the expected average revenue is 124600 when the value of costs or expenditure is 0. The slope coefficient, that is the estimated effect of costs on revenue, is 0.796. This means that for every additional unit of cost, the revenue increase by an average of 0.796 units. The p-value for the slope coefficient is less than 0.001, which means that the coefficient is statistically significant, indicating that increasing investments in digital marketing leads to higher revenue for SMEs. We therefore accept the hypothesis.

# *Conclusion*

In a nutshell, it is evident from the hypothesis conducted that higher digital marketing investment results in higher ROI and online sales for SMEs. Further, the results of linear regression models indicates that costs coefficient is statistically significant.

# *Implications*

The findings show that investing in digital marketing can be an effective way for SMEs to enhance their agility and competitive advantage by increasing their ROI and online sales. Thus, it is recommended that SMEs should invest appropriately heavily in digital marketing for increased profitability and so as to gain competitive edge in the long run.

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# *Appendix*

CODE USED FOR DATA ANALYSIS

---

title: "SMEs in UK"

output: html\_notebook

---

```{r}

setwd("C:/Users/user/Downloads/")

```

```{r}

library(dplyr)

library(tidyverse)

```

```{r}

data <- read.csv("Businesses.csv")

str(data)

```

```{r}

select\_data <- select(data, revenue, sales, primary\_sector, costs, country\_of\_primary\_operation)

# Sort the data by sales

select\_data <- arrange(data, desc(sales))

head(select\_data)

```

<!-- Hypothesis 1 -->

<!-- Higher investment on digital marketing by SMEs leads to higher ROI/revenue -->

```{r}

library(ggplot2)

ggplot(select\_data, aes(x= costs, y=revenue)) +

geom\_point() +

geom\_smooth(method=lm) +

labs(x="Costs", y="Revenue")+

ggtitle("Investment on Digital Marketing & Revenue")

```

<!-- Hypothesis 2 -->

<!-- Higher investment on digital marketing leads to higher(online) sales by SMEs. -->

```{r}

library(ggplot2)

ggplot(select\_data, aes(x= costs, y=sales)) +

geom\_point() +

geom\_smooth(method=lm) +

labs(x="Costs", y="Sales")+

ggtitle("Investment on Digital Marketing & Sales")

```

# Linear Regression on sales

```{r}

library(ggplot2)

mod.1 <- lm(sales~costs, data=select\_data)

summary(mod.1)

```

# Linear Regression on revenue

```{r}

library(ggplot2)

mod.2 <- lm(revenue~costs, data=select\_data)

summary(mod.2)

```